NASA PBRF DECOMMISSIONING PROJECT ENVIRONMENTAL MEDIA SAMPLING AND ANALYSIS CUMULATIVE REPORT NOVEMBER 2000 – OCTOBER 2002

PLUM BROOK STATION
PLUM BROOK REACTOR FACILITY
SANDUSKY, OHIO

Prepared For:
NASA
Plum Brook Station
Plum Brook Reactor Facility Decommissioning Project

Prepared By:
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Louisville District

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1.0 INTRODUCTION & REPORT OVERVIEW

The National Aeronautics and Space Administration's (NASA) Plum Brook Reactor Facility (PBRF), located on the Plum Brook Station (PBS), is a satellite facility of NASA's John Glenn Research Center (GRC) in Cleveland, Ohio. The PBS (formerly the Plum Brook Ordnance Works) is located 50 miles west of Cleveland in the city of Sandusky, Ohio, Figure 1. The PBRF is located within an 27-acre fenced area on the PBS, Figure 2.

The PBRF operated from 1961 to 1973. NASA currently has two 10 CFR Part 50 facility licenses to "possess but not operate" two reactors within the Reactor Building (Building 1111) at the PBRF. NASA has decided that the PBRF should be decommissioned, remaining radioactive structures and materials disposed of, and the remaining Nuclear Regulatory Commission (NRC) licenses terminated. The objective of decontamination and decommissioning will be to terminate the licenses and allow release of the 27-acre PBRF area for unrestricted use.

As part of the decommissioning project, environmental media are sampled and analyzed on a periodic basis. Soil, sediments, groundwater, surface water, and air are sampled and analyzed in accordance with the frequencies and procedures outlined in the NRC, Facility License No. R-93 (NASA), Amendment No. 7, Appendix A, "Technical Specifications", and the NRC, Facility License No. TR-3 (NASA), Amendment No. 11, Appendix A, "Technical Specifications". Additional site specific details and requirements of an environmental media sampling program were provided in the NASA Glenn Research Center, "Decommissioning Plan For The Plum Brook Reactor Facility", Revision 2, (D-Plan), which was approved by the NRC in March 2002.

The purposes of the environmental media sampling and analysis program are: (1) to establish site-specific "baseline" conditions prior to decommissioning activities, that can be used as references during decommissioning; and, (2) to ensure that no contaminates are introduced into the environment above established regulatory limits. The environmental conditions during decommissioning will be compared against the environmental conditions before decommissioning. If a significant increase of a contaminant of concern is identified during subsequent sampling events, the cause of the increase will be investigated and appropriate measure(s) to mitigate any further impacts will be taken. Additionally, the environmental media sampling program will be used to determine regulatory compliance, as well as to assist in license termination by the NRC.

Presently, the NASA PBRF decommissioning project is regulated by the NRC. As the project progresses and license termination is requested, state and federal environmental agencies may review and/or validate the results of the environmental monitoring program. Therefore, a Sampling and Analysis Plan (SAP), which includes both a field sampling plan (FSP) and a Quality Assurance Project Plan (QAPP), was developed to address NRC requirements as presented in the approved D-Plan, as well

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FIGURE 1
SITE LOCATION MAP

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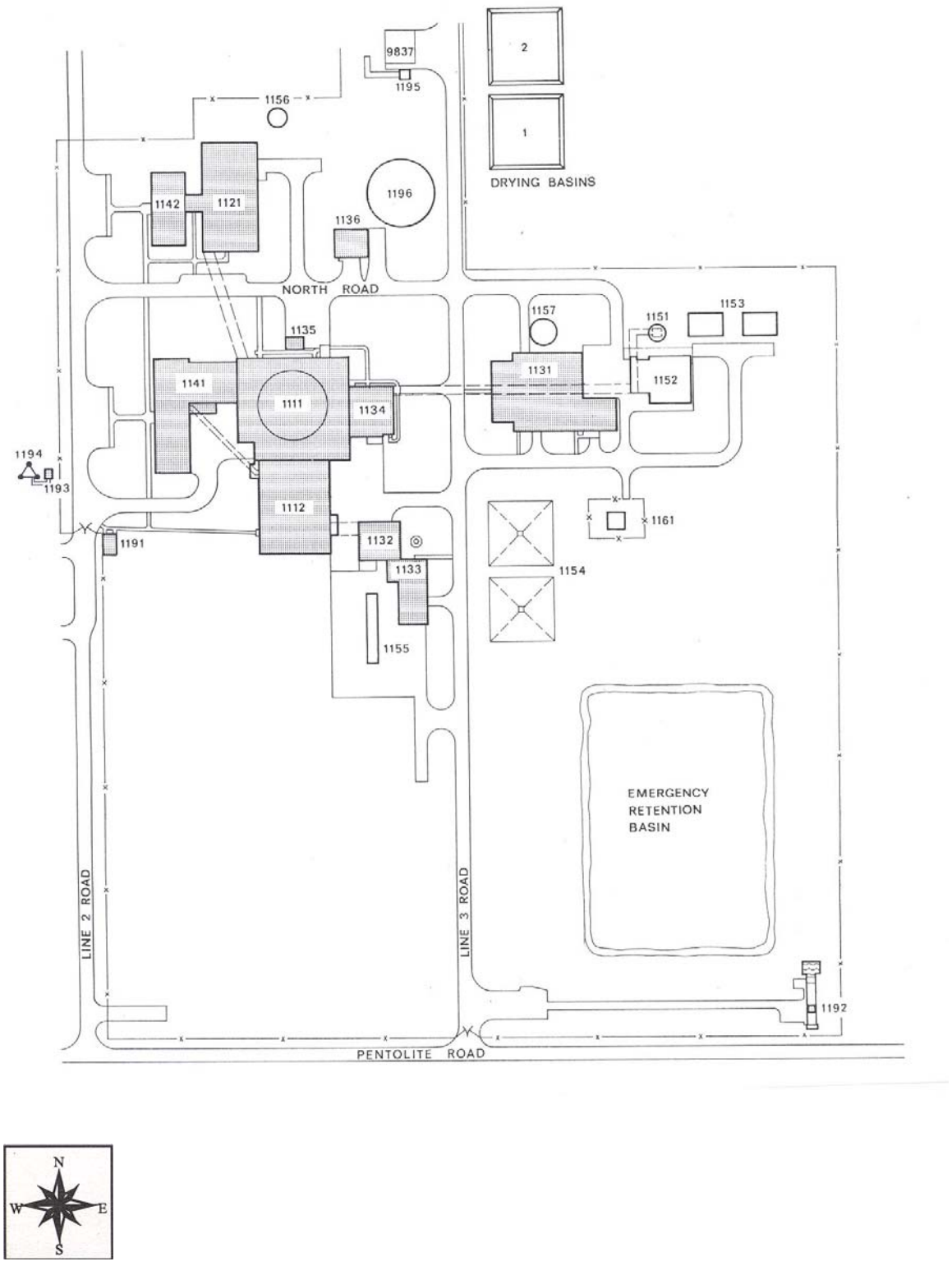

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FIGURE 2
PBRF SITE PLAN

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as sampling procedures, analytical methods, and data reporting protocols acceptable to state and federal agencies. The most current version of the SAP, entitled "Environmental Media Sampling and Analysis Plan", October 2002, prepared by the US Army Corps of Engineers – Louisville District, is maintained at the PBRF and available for review on request.

This annual report summarizes the analytical data collected from November 2000 to October 2002 associated with the environmental media sampling program. Collection of samples for waste characterization and radionuclide characterization surveys are addressed in separate plans and procedures, and are not part of this report.

It should be noted that prior to approval of the D-Plan and full implementation of the SAP, environmental media sampling was conducted. However, not all environmental media were sampled at the locations or analyzed for the parameters specified in the SAP. This report incorporates all usable data collected to date.

2.0 SURFACE WATER AND SEDIMENT SAMPLING

2.1 Surface water and Sediment Sampling Locations

Surface water and sediment samples are collected from 6 sampling stations, as shown on Figure 3. A description of each sampling location is provided below.

Station 1 (STA 1) – located in Pentolite Ditch upgradient and up geographic elevation from the PBRF. Pentolite Ditch is an intermittent stormwater tributary to Plum Brook. Because Pentolite Ditch at Station 1 only contains water after a precipitation event, surface water samples are not always available for collection; Station 1 is frequently "dry".
Station 2 (STA 2) – located at the confluence of Pentolite Ditch and the Water Effluent System (WEMS) from the PBRF. The PBRF is graded such that surface water enters the WEMS inside the PBRF fence line via overland flow. Surface water and sediments are collected at the concrete culvert in Pentolite Ditch on the south side of Pentolite Road.
Station 3 (STA 3) – located at the "V" notched weir located along Pentolite Ditch down gradient of the PBRF prior to discharge into Plum Brook. Surface water and sediment samples are collected on the upgradient side of the weir.
Station 4 (STA 4) – located in Plum Brook upgradient of the confluence of Pentolite Ditch.
Station 5 (STA 5) – located in Plum Brook down gradient of the confluence of Pentolite Ditch.
Station 9 (STA 9) – located in Pipe Creek. Pipe Creek is located about 1 mile southeast of the PBRF in an assumed non-impacted area, and is considered a background sampling station. Surface water and sediments are collected on the upgradient side of the concrete culvert before Pipe Creek enters the Plum Brook Station.

2.2 Sampling Frequency and Analytical Requirements

Surface water samples are collected on a monthly basis and analyzed for:

- Gross Alpha by US Environmental Protection Agency (USEPA) Method 900.0 modified
- Gross Beta by USEPA Method 900.0 modified

Sediment samples are collected on a monthly basis and analyzed for:

- Gross Alpha by USEPA Method 900.0 modified
- Gross Beta by USEPA Method 900.0 modified
- Cs-137 (gamma spectroscopy) by Department of Energy Environmental Measurement Laboratory Heath and Safety Laboratory (DOE-EML HASL) Method 300 modified

Additional analyses may be performed as needed.

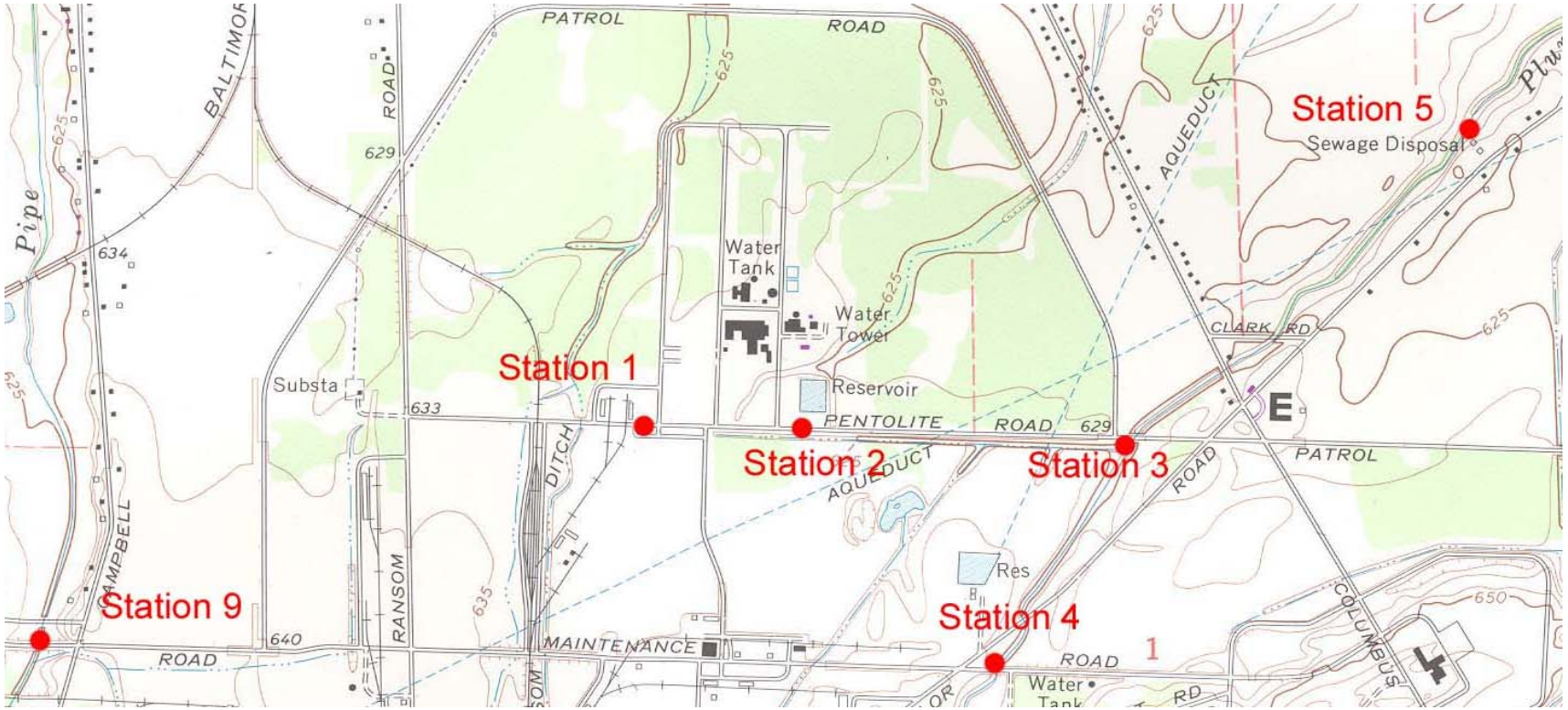

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FIGURE 3

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

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2.3 Surface Water Results

Figures 1 through 6, Appendix A, show the cumulative gross alpha results for each surface water sampling station from initiation of sampling to present. Figure 7, Appendix A, shows the cumulative combined gross alpha results for all surface water sampling locations.

Figures 8 through 13, Appendix A, show the cumulative gross beta results for each surface water sampling station from initiation of sampling to present. Figure 14, Appendix A, shows the cumulative combined gross beta results for all surface water sampling locations.

Project Specific Action Limits were established at 10-fold greater than the project specific lower limits of detection (LLDs), as specified in the "Technical Specifications". The LLD is defined as the smallest amount of radiation or radioactivity that statistically yields a net result above the method background. The Project Specific Action Limits were selected based on the regulatory limits, as an average over time, set forth in 10 CFR 20, Table 2, Column 2, Effluent Water.

The Project Specific Action Limits shown on each graph are used as a level of comparison to gauge activities. If data begin to approach or exceed these action limits, additional sampling may be performed, as necessary and/or more detailed analyses (radionuclide specific). If confirmed, a review of operations will be performed to determine the cause of the increased values, as well as to determine appropriate measure(s) to mitigate any further impacts.

Project specific LLDs and action limits for surface water are as follows:

- Gross Alpha
  LLD = 2×10^{-9} μCi/mL (2 pCi/L)
  Project Specific Action Limit = 20 pCi/L
- Gross Beta
  LLD = 5×10^{-8} μCi/mL (50 pCi/L)
  Project Specific Action Limit = 500 pCi/L

2.3.1 Cumulative Results through October 2002 – Surface Water

When reviewing the graphs at each station or the combined results, it is evident that individual results fluctuate month to month. Fluctuations are an expected occurrence particularly given seasonal variations within the environment, physical sampling differences, analytical precision and accuracy, matrix interferences, background levels, and the like. However, all results are below the Project Specific Action Limits. Additionally, surface water results from sampling Station 02, Station 03, and Station 05, which are down stream of the PBRF and could potentially be impacted by PBRF operations, are similar to those results from sampling Station 01, Station 04, and Station 09, which would not be impacted by PBRF activities.

It should be noted that data gaps are a result of many factors including dry periods when surface water is not present at a particular sampling station, and the presence of ice when samples cannot be collected.

2.4 Sediment Results

Figures 15 through 20, Appendix A, show the cumulative gross alpha results for each sediment sampling station from initiation of sampling to present. Figure 21, Appendix A, shows the cumulative combined gross alpha results for all sediment sampling locations.

Figures 22 through 27, Appendix A, show the cumulative gross beta results for each sediment sampling station from initiation of sampling to present. Figure 28, Appendix A, shows the cumulative combined gross beta results for all sediment sampling locations.

Project Specific Action Limits were established using results from sampling stations that would not be impacted by PBRF operations (i.e. STA1, STA 4, and STA9), because regulatory limits have not been established for this medium. A mathematical calculation using the yearly average plus 3 times the standard deviation was employed to determine the Project Specific Action Limit for both gross alpha and gross beta.

The Project Specific Action Limits shown on each graph are used as a level of comparison to gauge activities. If data begin to approach or exceed these action limits, additional sampling may be performed, as necessary and/or more detailed analyses (radionuclide specific). If confirmed, a review of operations will be performed to determine the cause of the increased values, as well as to determine appropriate measure(s) to mitigate any further impacts.

Project specific LLDs and action limits for sediment are as follows:

- Gross Alpha
  LLD = 1 pCi/g
  Project Specific Action Limit = 25 pCi/g
- Gross Beta
  LLD = 1 pCi/g
  Project Specific Action Limit = 45 pCi/g

2.4.1 Cumulative Results through October 2002 – Sediment

When reviewing the graphs at each station or the combined results, it is evident that individual results fluctuate month to month. Fluctuations are an expected occurrence particularly given seasonal variations within the environment, physical sampling differences, analytical precision and accuracy, matrix interferences, background levels, and the like.

It should be noted that data gaps are a result of many factors including when sediments were not collected and the presence of ice when samples cannot be collected.

On further review of the gross alpha results from October 2002, gross alpha results from all sampling stations are either at, or above the calculated Project Specific Action Limit. This includes the sampling stations that would not have been impacted by PBRF operations (i.e. STA1, STA 4, and STA9). This upward trend may be the result of seasonal variation when during dry weather conditions (as is the case during the late summer through late winter months) metals accumulate in the sediments and are more readily detected. In order to determine if the increase in gross alpha detection is a result of specific radionuclides associated with past PBRF operations or a result background conditions, future sediment samples will be analyzed for by alpha spectroscopy via DOE-EML HASL Method 300-E-U-04.

On further review of the gross beta results from October 2002, an upward trend is also evident at all sampling stations including the sampling stations that would not have been impacted by PBRF operations (i.e. STA1, STA 4, and STA9). This upward trend may be the result of seasonal variation when during dry weather conditions (as is the case during the late summer through late winter months) metals accumulate in the sediments and are more readily detected. This seasonal variation is evident at Station 2 during the winter months in 2000 and 2001.

To validate this increase in gross beta detection, particularly at sampling Station 2, which is above the calculated Project Specific Action Limit, a review of the specific radionuclide data (beta emitters) was performed. The increase in gross beta detection is attributed to an increase in detection of Cs-137. Cs-137 is a ubiquitous radionuclide that occurs throughout the environment from historic weapons testing and nuclear incidents such as Chernobyl, Russia. Because Cs-137 is a surface soil contaminant, it tends to migrate on soil particles, thus accumulating in low-lying ditches and swales. Then during dryer periods, when accumulated compounds are more condensed in the media being sampled, it is more readily detected.

Cs-137 is also a radionuclide associated with past PBRF operations with a half-life of 30 years. PBRF discontinued operations in 1974, therefore approximately 1 half-life has elapsed. To more fully determine if the increased detection of both gross beta and Cs-137 is attributed to past PBRF operations, or is a results of seasonal variations, this increasing trend will be closely followed with additional analyses performed if needed.

3.0 GROUNDWATER SAMPLING

3.1 Groundwater Sampling Locations

Groundwater below the PBRF is separated into two aquifers; the "shallow aquifer" which is located in the unconsolidated alluvial geologic material, and the "deep aquifer" which is located in the bedrock. The groundwater monitoring wells across the PBRF were categorized as those with screened intervals within the unconsolidated material or shallow groundwater wells, and those with screened intervals that penetrated the underlying bedrock or the deep groundwater wells. A description of each groundwater well and building foundation sump is provided in Table 1, and shown on Figures 4 and 5.

Table 1 Groundwater and Sump Monitoring Locations

Well or Sump ID	Sampling Frequency	Depth (ft)	Dia (in)	Location
UNCONSOLIDATED MATERIALS MONITORING WELLS "Shallow Groundwater Wells"				
EB-**RA-01**	Monthly	16	2	Corner of Pentolite & Line Z Roads outside PBRF fence
EB-**RA-02**	Monthly	20	2	North of Reactor Bldg 1111 along Line 3 Road
RA-**MW-02**	Monthly	24.5	2	SE of Bldg 1131, south side of Driveway E
Rx Bldg 25-ft Sump	Monthly	25	NA	Dewatering sump inside Reactor Bldg at the -25 ft elev
EB-**RA-03**	Annual	22	2	West of Bldg 1131
EB-**RA-04**	Annual	10	2	SW corner of Bldg 1131
EB-**RA-05**	Annual	10	2	South of Bldg 1131 next to MW-05 deep well
EB-**RA-06**	Annual	10	2	East of Bldg 1131 near settling basins on Driveway E
RA-**MW-03**	Annual	21	2	East of Reactor Bldg, west side of Line 3 Road
RA-**MW-04**	Annual	25.5	2	NW corner of Bldg 1131
RA-**MW-06**	Annual	23.5	2	East of Bldg 1131, west of above ground concrete water treatment basin
Bldg 1131 Sump	Annual		NA	Dewatering sump inside Bldg 1131
Rx Bldg 15-ft Sump	Annual	15	NA	Dewatering sump inside Reactor Bldg at the -15 foot elevation
HRA Vault 25-ft Sump	Quarterly	25	NA	Dewatering sump inside Hot Retention Area Underground Storage Tank Vault -25 foot elevation
BEDROCK MONITORING WELLS "Deep Groundwater Wells"				
Reactor 1 **Rx01**	Monthly	80	8	West of Reactor Bldg 1111 and south of Bldg 1141
Reactor 2 **Rx02**	Annual	40	8	West of Reactor Bldg 1112
Reactor 3 **Rx03**	Monthly	40	8	East of Reactor Bldg 1112
Reactor 4 **Rx04**	Annual	40	8	East of Reactor Bldg 1112
RA-**MW-05**	Monthly	49.5	2	South of Bldg 1131 next to RA-05

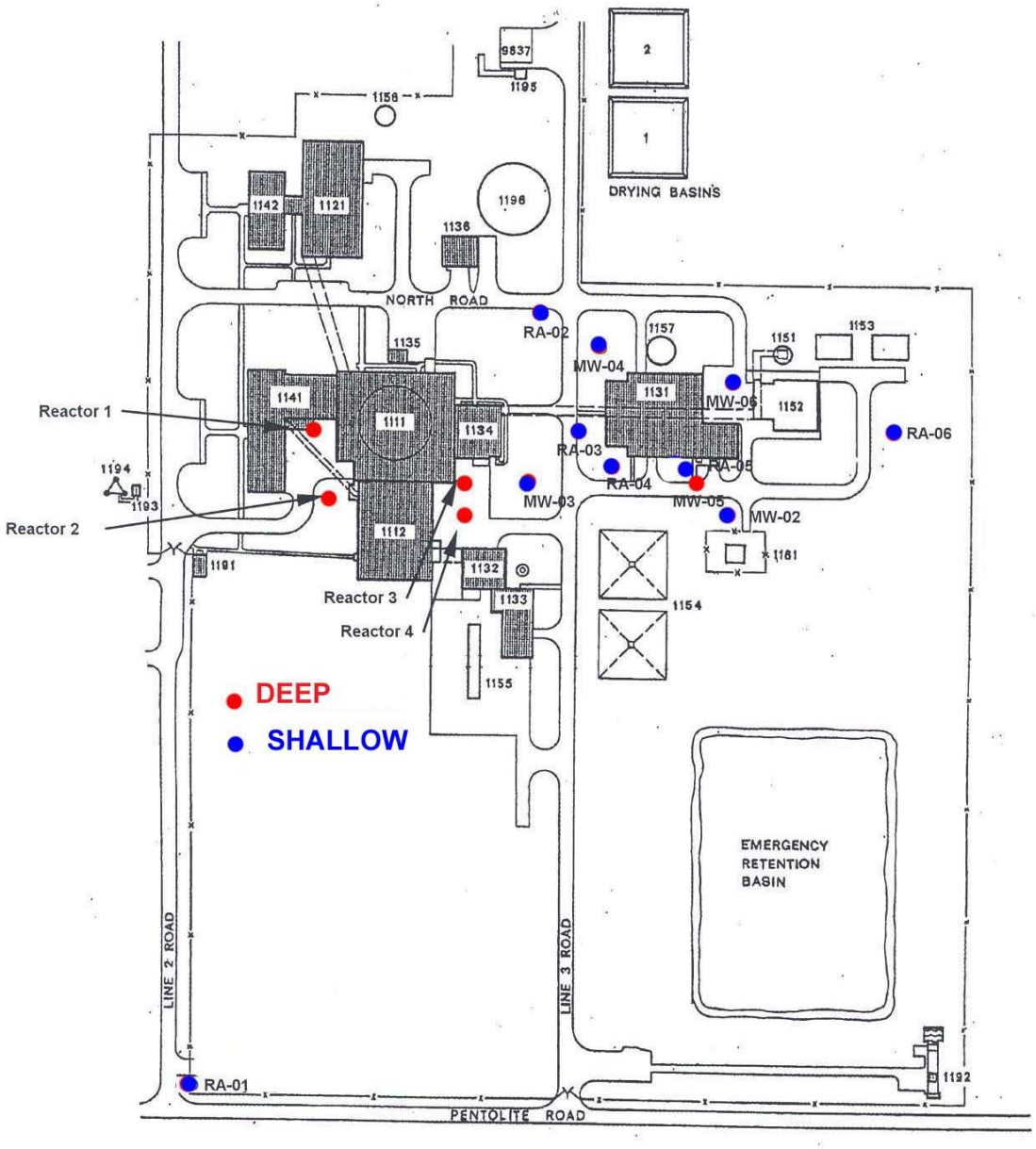

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FIGURE 4
GRIUNDWATER SAMPLING LOCATIONS

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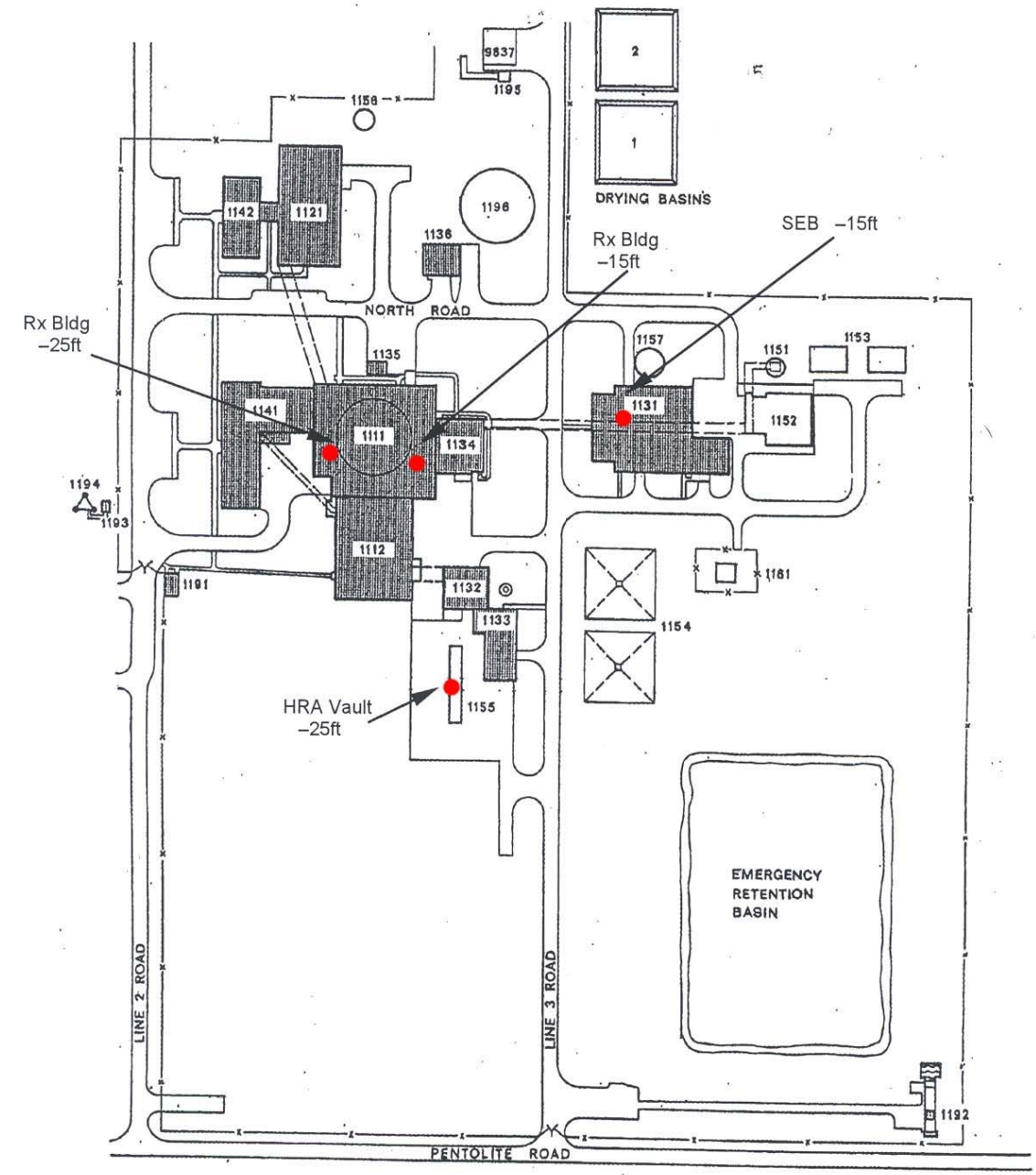

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FIGURE 5
SUMP SAMPLING LOCATIONS

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3.2 Sampling Frequency and Analytical Requirements

Groundwater and building foundation sump samples are collected on periodic basis, as indicated in Table 1. On an annual basis, in October of each year, all accessible groundwater wells and building foundation sumps are sampled and analyzed for:

- Gross Alpha by USEPA Method 900.0 modified
- Gross Beta by USEPA Method 900.0 modified

Additional analyses may be performed, as needed.

3.3 Cumulative Results through October 2003 - Groundwater and Sumps

Table 1, Appendix B, summarizes the gross alpha and gross beta results for all the groundwater water monitoring wells and building foundation sumps sampled during the October annual event. As more data become available plots and graphs will be generated to more visually characterize the groundwater data across the site. For this report, only tabular data is presented.

Project Specific Action Limits were established at the USEPA drinking water Maximum Concentration Limit (MCL) for gross alpha, and at 10-fold greater than the project specific LLD for gross beta. The USEPA MCL for gross beta is set at 4 mrem per year, which is a dose rate and not a concentration. Since other factors contribute to radiological dose on an annual basis, the 10-fold greater LLD value was selected for comparison of gross beta.

Project specific LLDs and action limits for groundwater and sump samples are as follows:

- Gross Alpha
  LLD = 2×10^{-9} μCi/mL (2 pCi/L)
  Project Specific Action Limit = USEPA MCL = 15 pCi/L
- Gross Beta
  LLD = 5×10^{-8} μCi/mL (50 pCi/L)
  Project Specific Action Limit = 500 pCi/L

The Project Specific Action Limits were instituted as a level of comparison to gauge activities. If data begin to approach or exceed these action limits, additional sampling may be performed, as necessary and/or more detailed analyses (radionuclide specific). If confirmed, a review of operations will be performed to determine the cause of the increased values, as well as to determine appropriate measure(s) to mitigate any further impacts.

As evident, all results are below the Project Specific Action Limits, except the gross alpha value for groundwater well RA-06, which was slightly above the Project Specific Action Limit. In order to determine if the gross alpha activity in RA-06 is valid, the well will be sampled again on a semi-annual basis (i.e. April 2003).

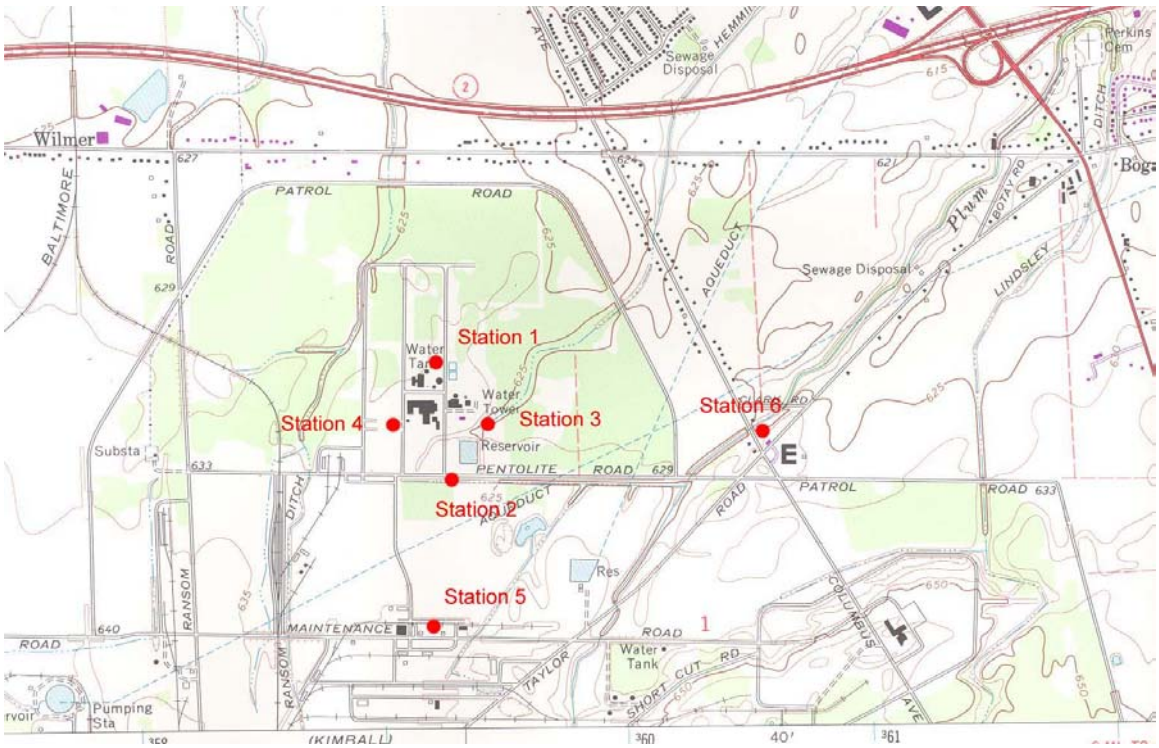

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FIGURE 6
AIR SAMPLING STATIONS

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4.0 FENCELINE AIR SAMPLING

4.1 Fenceline Air Sampling Locations

Air samples are collected from six sampling stations, as shown on Figure 6. A description of each sampling location is provided below.

Station 1 (STA 1) – located on the north fenceline of the PBRF.
Station 2 (STA 2) – located on the south fenceline of the PBRF.
Station 3 (STA 3) – located on the east fenceline of the PBRF.
Station 4 (STA 4) – located on the west fenceline of the PBRF.
Station 5 (STA 5) – located southeast of the PBRF near Building 9206, and serves as an up wind location.
Station 6 (STA 6) – located northeast of the PBRF near the former wastewater treatment plant, and serves as a down wind location.

4.2 Sampling Frequency and Analytical Requirements

Air samples are collected weekly from each of the six sampling Stations. Air flow is approximately two cubic feet per minute through a 47 millimeter glass fiber filter. Air sampling pumps are checked monthly with a hand-held field rotameter, and are calibrated by the manufacturer annually. Individual air filters are analyzed both onsite and at an off-site laboratory for:

- Gross Alpha by USEPA Method 900.0 modified
- Gross Beta by USEPA Method 900.0 modified

Monthly composite samples are prepared in the off-site laboratory by combining (via digestion) all individual air filters collected at a specific Station. The composite samples are analyzed for 8 selected metals, as indicated below.

- Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, and Nickel by USEPA Method 6010B
- Mercury by USEPA Method 7471A

These eight metals were selected as indicator metal compounds since they are common metals found in building materials found onsite. The composite metals analyses are being used to gauge site conditions at the fenceline against up wind and down wind conditions. These samples are not used to support or guide personal breathing air programs, which are addressed in separate implementing plans, policies, and procedures. These documents are also available for review upon request.

4.3 Fenceline Air Filter Results

4.3.1 Cumulative Results through October 2002 – Air Gross Alpha and Gross Beta

Prior to full implementation of the SAP in October 2002, air filters were analyzed/counted on-site for gross alpha and gross beta. From October 2002 through the reminder of the project, all air filters will be analyzed at the off-site laboratory. Selected air filters were transmitted to the off-site laboratory for confirmatory gross alpha and gross beta analysis to verify on-site laboratory counting techniques. Weekly air filters from all stations in April ’01, July ’01, October ’01, January ’02, April ’02, July ’02, and October ’02 were individually analyzed at the off-site laboratory and the results compared to the on-site laboratory. Results of the laboratory data and the onsite laboratory were within expected variances.

Figures 1 through 6, Appendix C, show the cumulative gross alpha results for each air monitoring station from initiation of sampling to present. Since there was no statistical difference, the graphs use off-site laboratory results, where selected samples were analyzed, in combination with on-site laboratory results to form a complete data set. Figure 7, Appendix C, shows the cumulative combined gross alpha results for all air monitoring locations.

Figures 8 through 13, Appendix C, show the cumulative gross beta results for each air monitoring sampling station from initiation of sampling to present. Since there was no difference than expected variations, the graphs use off-site laboratory results where selected samples were analyzed, in combination with on-site laboratory results to form a complete data set. Figure 14, Appendix C, shows the cumulative combined gross beta results for all air monitoring locations.

Project Specific Action Limits were established for gross alpha and gross beta based on the regulatory limits, as an average over time, set-forth in 10CFR20, Appendix B, Table 2, Column 1, Effluent Air Concentrations for Am-241 and Sr-90, respectively. Table 2 effluent air concentrations were adjusted for site-specific parameters, such as prevailing wind direction and occupancy factor, and were approved in the D-Plan. Project specific LLDs and action limits for fenceline air samples are as follows:

- Gross Alpha
  LLD = 5×10^{-15} μCi/mL
  Project Specific Action Limit = 5×10^{-14} μCi/mL
- Gross Beta
  LLD = 2×10^{-12} μCi/mL
  Project Specific Action Limit = 2×10^{-12} μCi/mL

The Project Specific Action Limits were instituted as a level of comparison. If data begin to approach or exceed these action limits, additional sampling may be performed, as necessary and/or more detailed analyses (radionuclide specific). If confirmed, a review

of operations will be performed to determine the cause of the increased values, as well as to determine appropriate measure(s) to mitigate any further impacts.

4.3.2 Cumulative Results through October 2002 – Air Composite Metals

Tables 1 through 16, Appendix C, provide summaries of the composite air filter samples by month for the selected metals analyses. Prevailing wind direction at the PBRF is from the southwest.

These metal results are intended to gauge operations at the PBRF in comparison to natural area air conditions. These metals were selected because they are common metals found in building materials. Increased detection of these metals at the PBRF fenceline may suggest an increase in dust migration from the site due to decommissioning activities.

However, when reviewing the metal results from the four stations on the PBRF fenceline (i.e. Stations 1-4) against both the up wind and down wind stations (i.e. Stations 5 and 6), it is evident that the results are similar. As the metal results vary (increase or decrease) at the fenceline by month, the results from the up wind and down wind locations also fluctuate within expected variances, indicating that operations at the PBRF have not affected ambient area air conditions.

5.0 QUALITY CONTROL SAMPLING

5.1 Quality Control Samples

Quality control samples are collected during sampling events to assess sampling precision, cross contamination, and introduction of contaminants into samples. Quality control sampling (duplicates and equipment rinsate blanks) described below are used for soil, sediment, surface water, and groundwater samples. A verification of gross alpha counts and gross beta counts between the on-site laboratory and the off-site laboratory is used as a quality control measure for air filter samples, as discussed in Section 4.3.1.

Matrix Spike/Matrix Spike Duplicate (MS/MSD), Trip Blanks, and Temperature Blanks are not required for radiochemical analytical parameters, and therefore are not collected or used as quality control samples for the radiochemical data quality review.

Duplicates (Dup) – Duplicate samples are collected at the same time as the original samples and in the same analytical sequence. Duplicate samples are used to monitor sampling precision in the field. One field duplicate is collected during each monthly sampling event for any media being sampled, and are analyzed for the same parameters as the primary sample. All duplicate samples collected and analyzed have been within appropriate limits of quality control.

Equipment Rinsate Blanks (EqB) – An equipment rinsate blank is a sample collected using organic-free water, which has been run over/through sample collection equipment following decontamination of the equipment. These samples are used to determine if contaminants have been introduced by contact of the sample medium with sampling equipment or the potential for cross-contamination. One equipment rinsate blank is collected from one piece of field equipment used at multiple locations during each sampling event. All equipment rinsate blanks collected and analyzed have been within appropriate limits of quality control.

5.2 Data Validation

Comprehensive data validation will be performed periodically over the life of the project. Analytical reports are requested in a “data validatable” format so that this may be accomplished in the future. A separate report detailing data validation will be produced at that time.

Presently, data are reviewed along with laboratory quality control summaries to determine completeness and usability. All data presented in this report have been determined usable.

6.0 REFERENCES

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APPENDIX A

SURFACE WATER AND SEDIMENT RESULTS

Pages A-1 to A-28

Figure 1
PBRF SURFACE WATER STATION 1:
GROSS ALPHA RESULTS

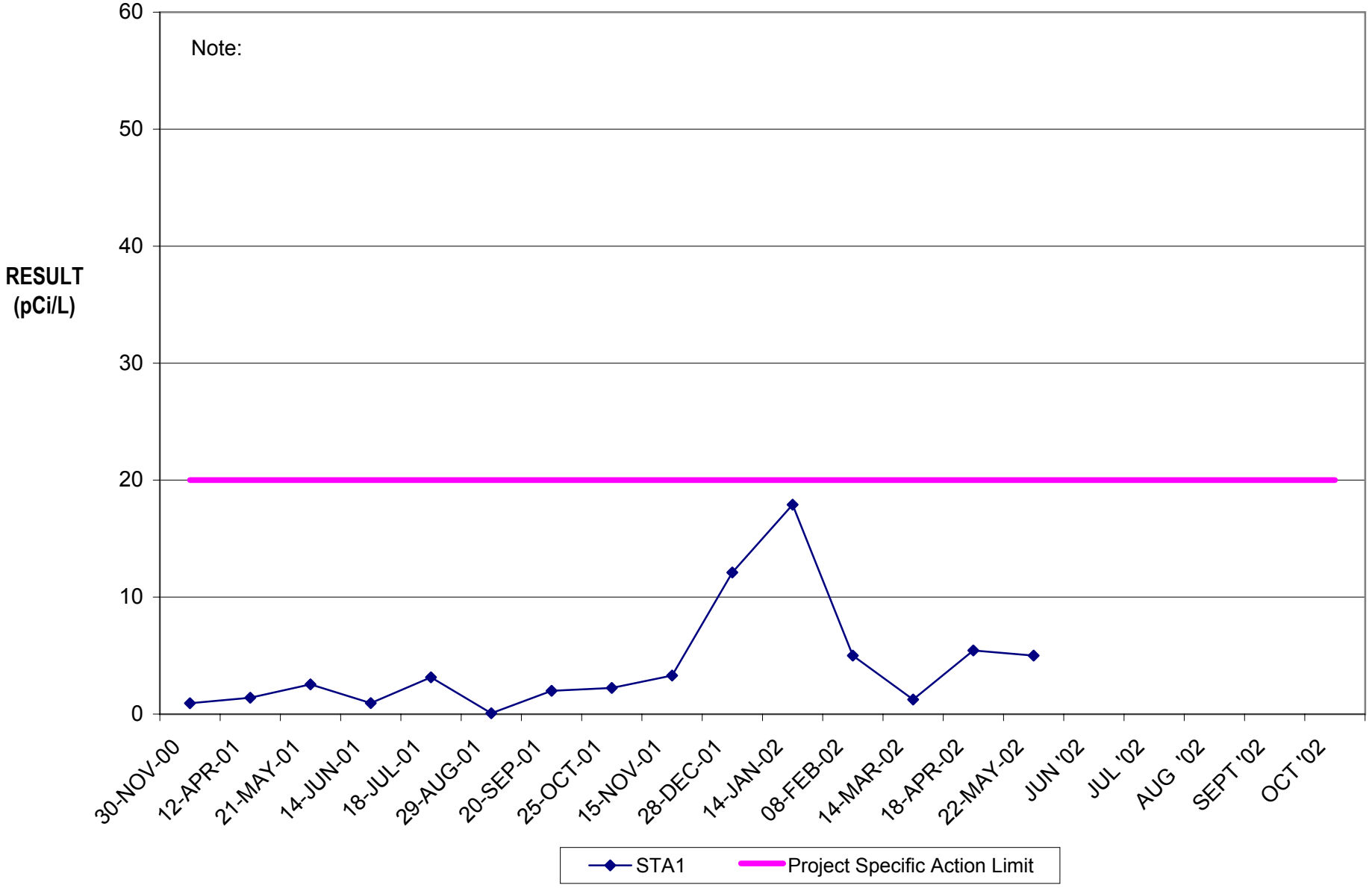


Figure 2
PBRF SURFACE WATER STATION 2:
GROSS ALPHA RESULTS

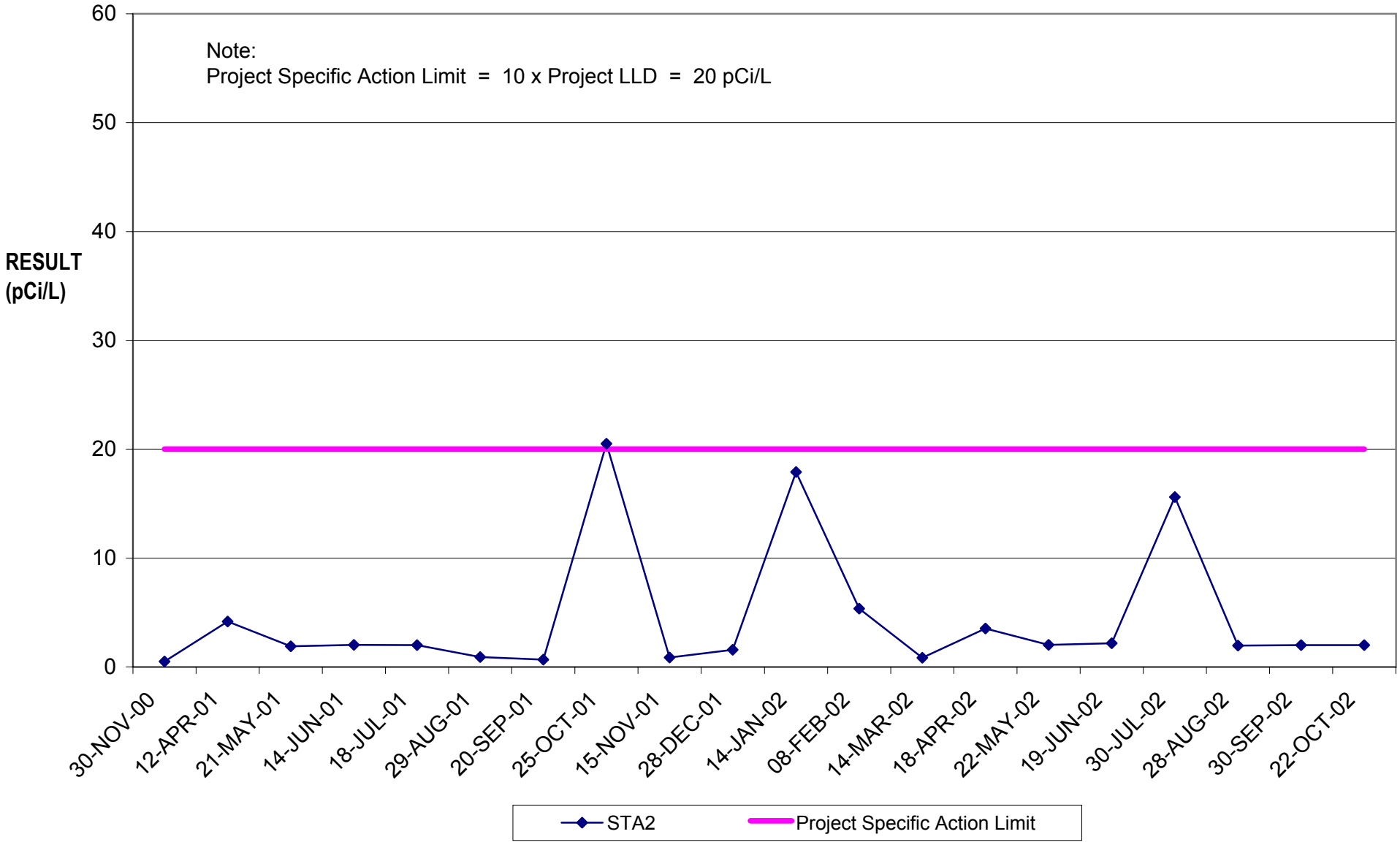


Figure 3
PBRF SURFACE WATER STATION 3:
GROSS ALPHA RESULTS

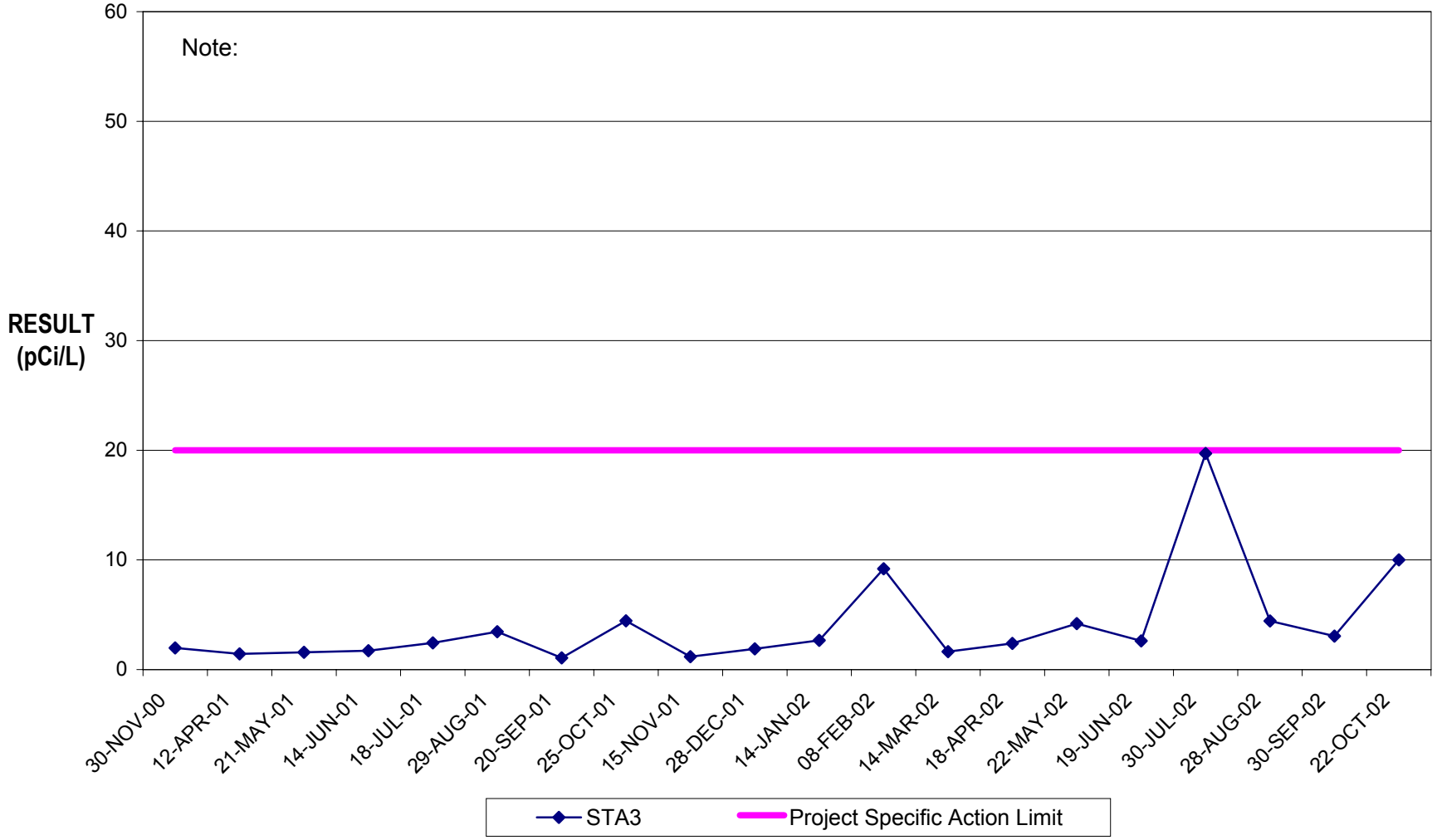


Figure 4
PBRF SURFACE WATER STATION 4:
GROSS ALPHA RESULTS

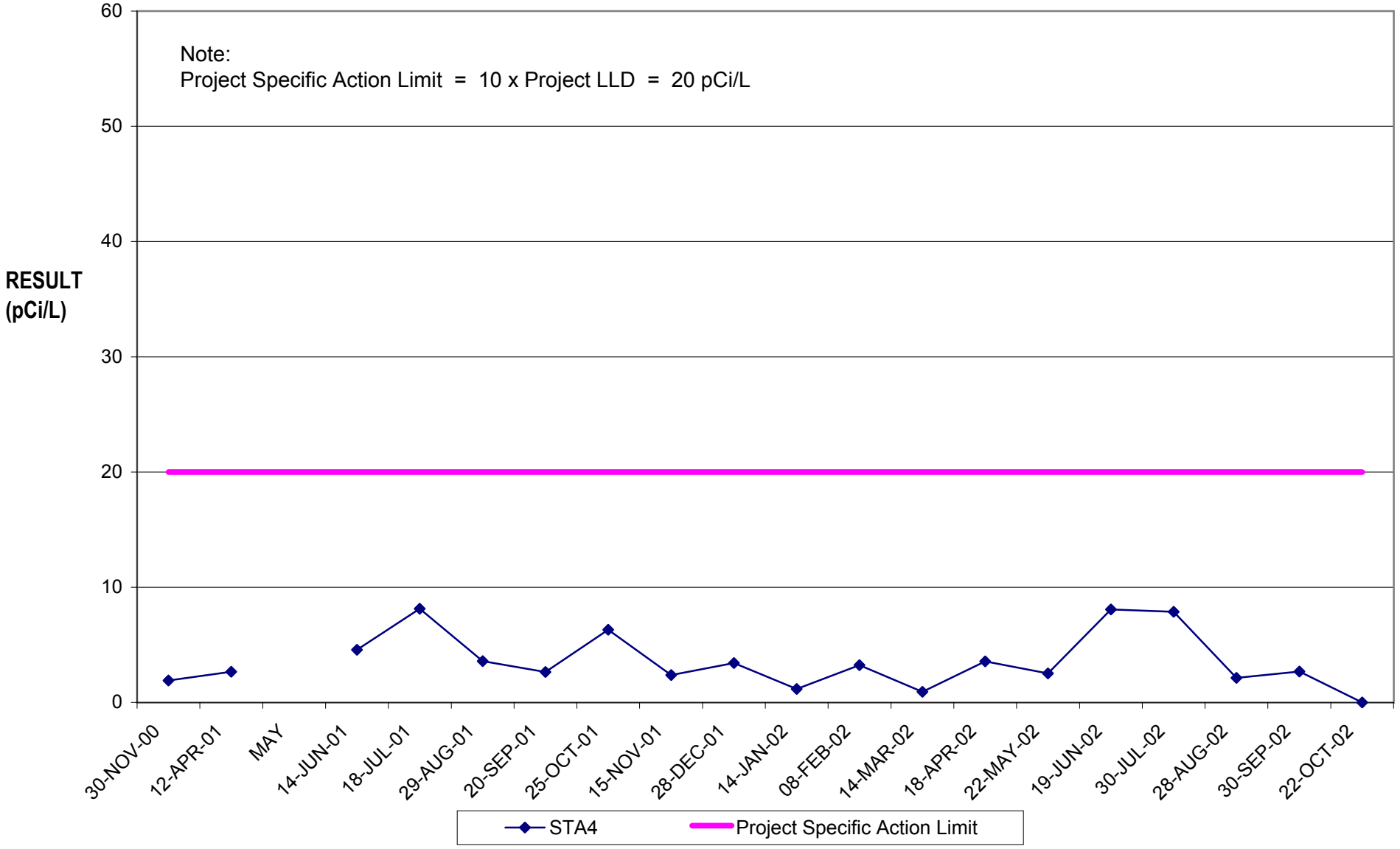


Figure 5
PBRF SURFACE WATER STATION 5:
GROSS ALPHA RESULTS

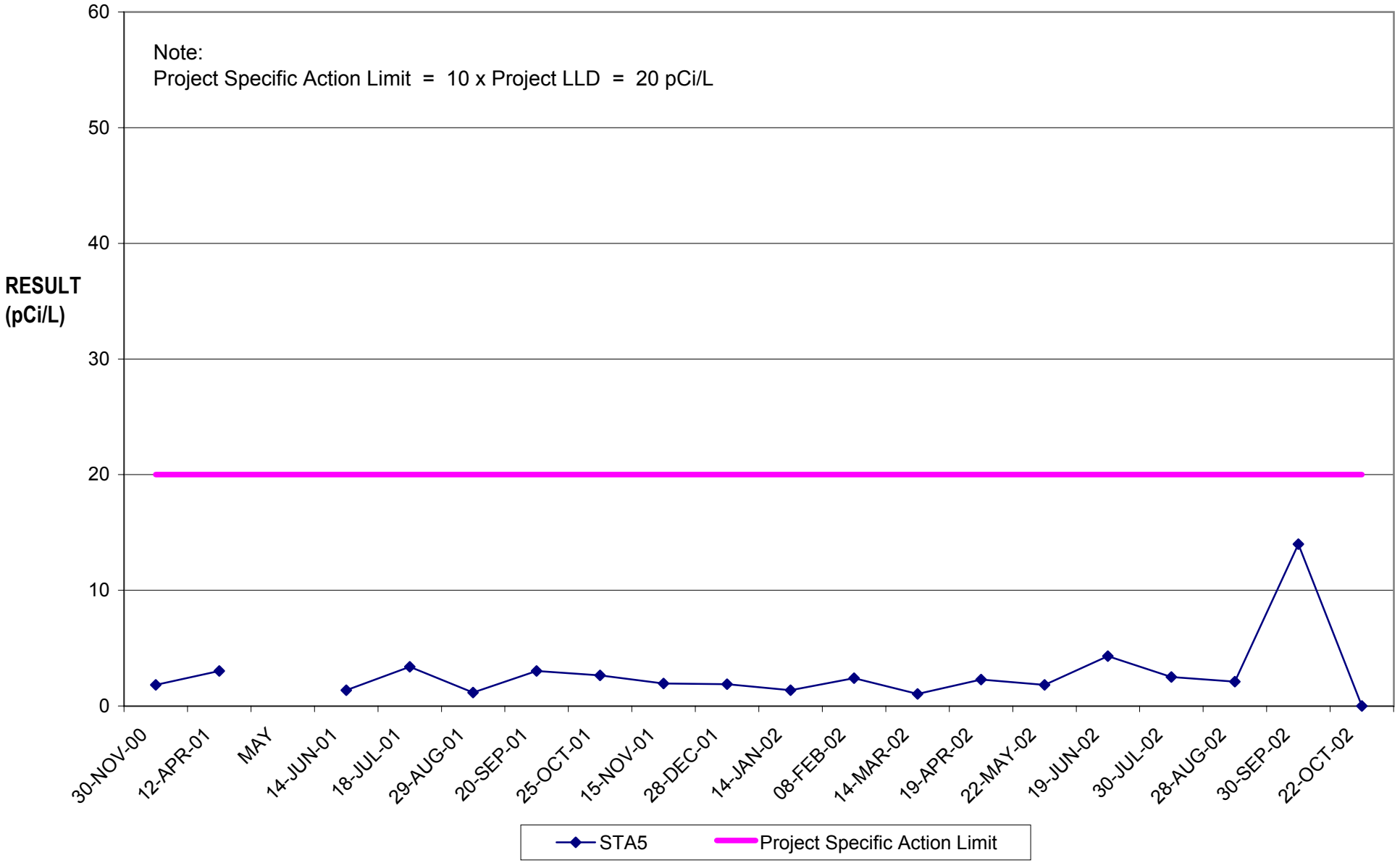


Figure 6
PBRF SURFACE WATER STATION 9:
GROSS ALPHA RESULTS

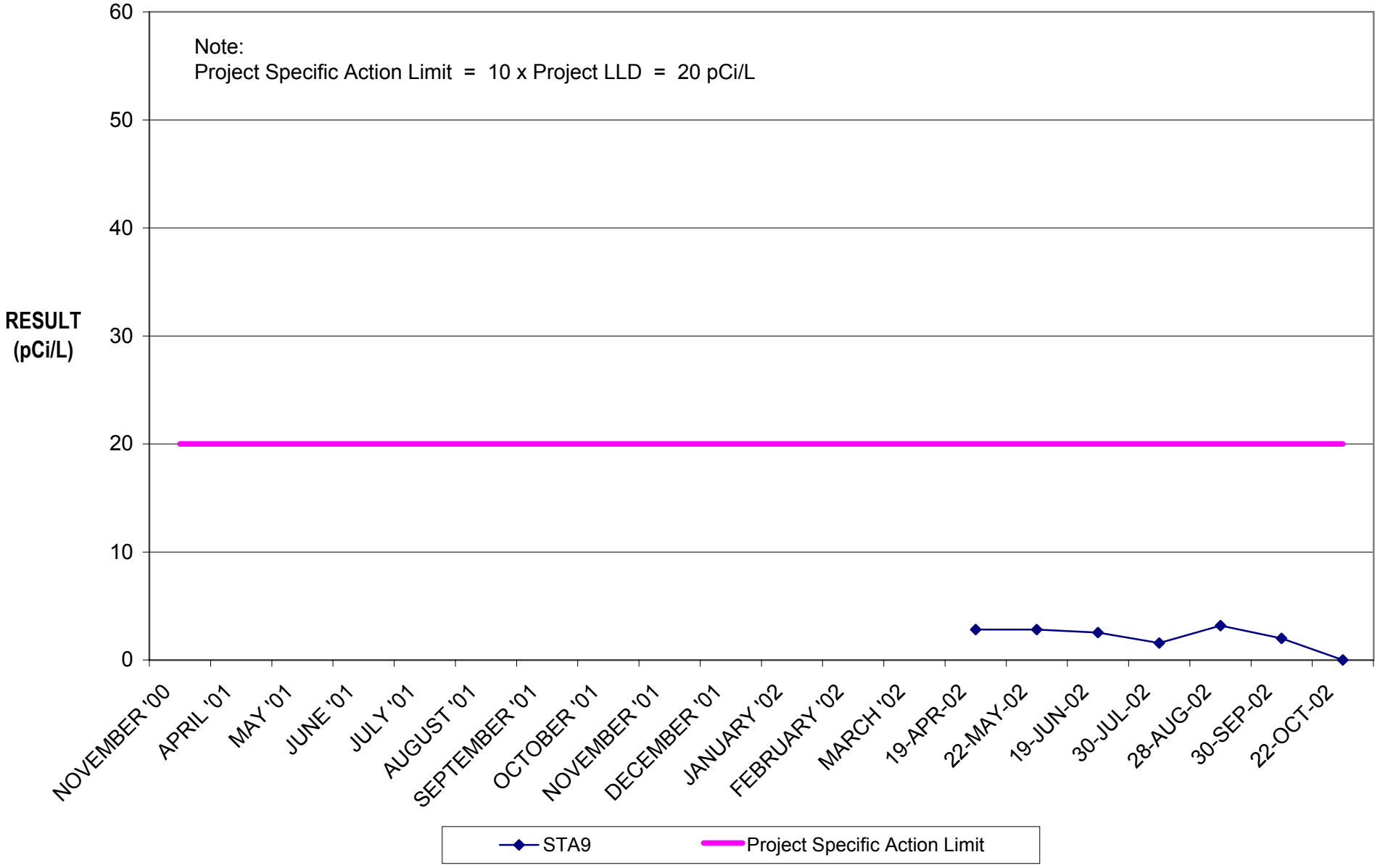


Figure 7
PBRF SURFACE WATER:
CUMULATIVE GROSS ALPHA RESULTS

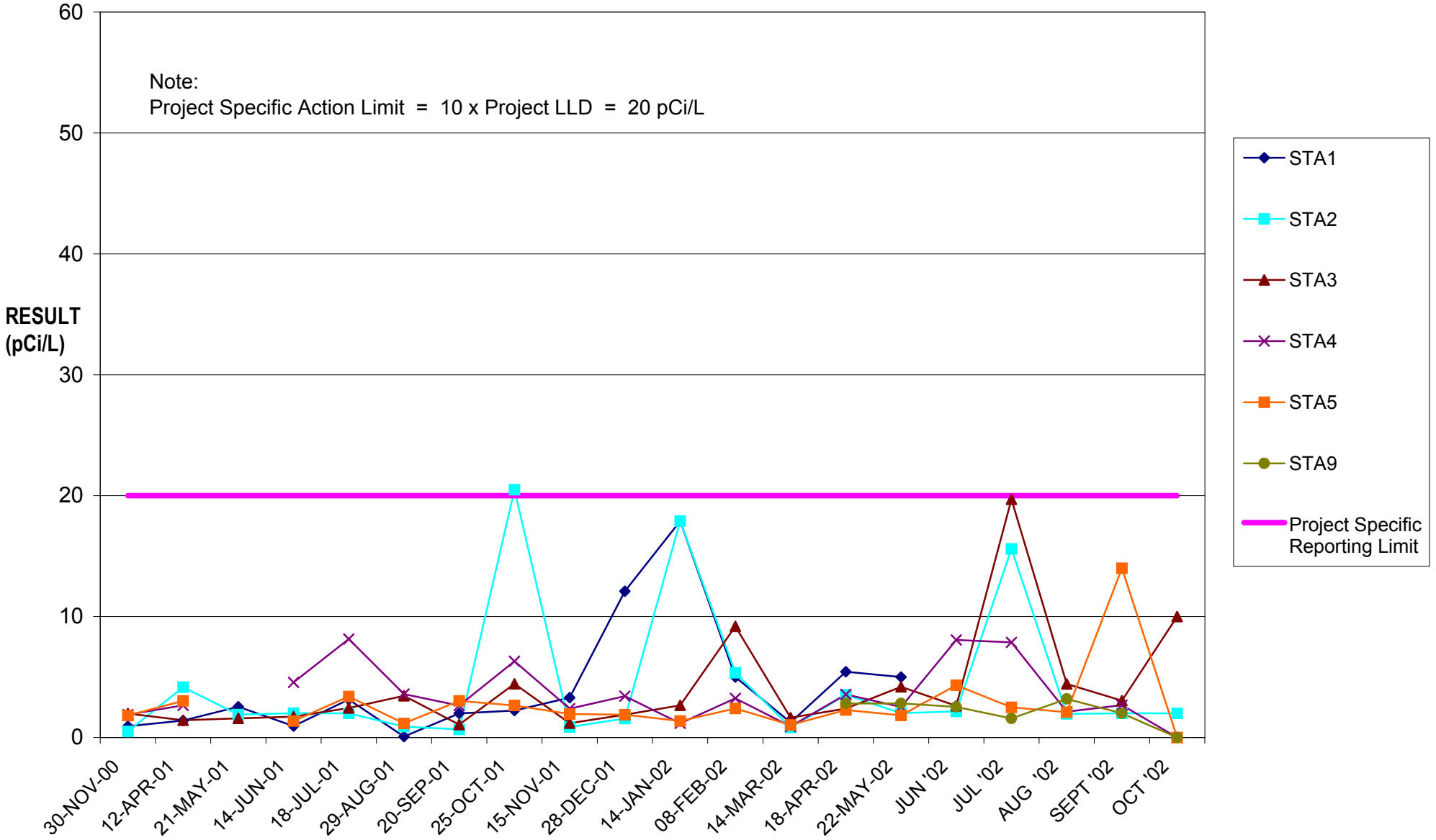


Figure 8
PBRF SURFACE WATER STATION 1:
GROSS BETA RESULTS

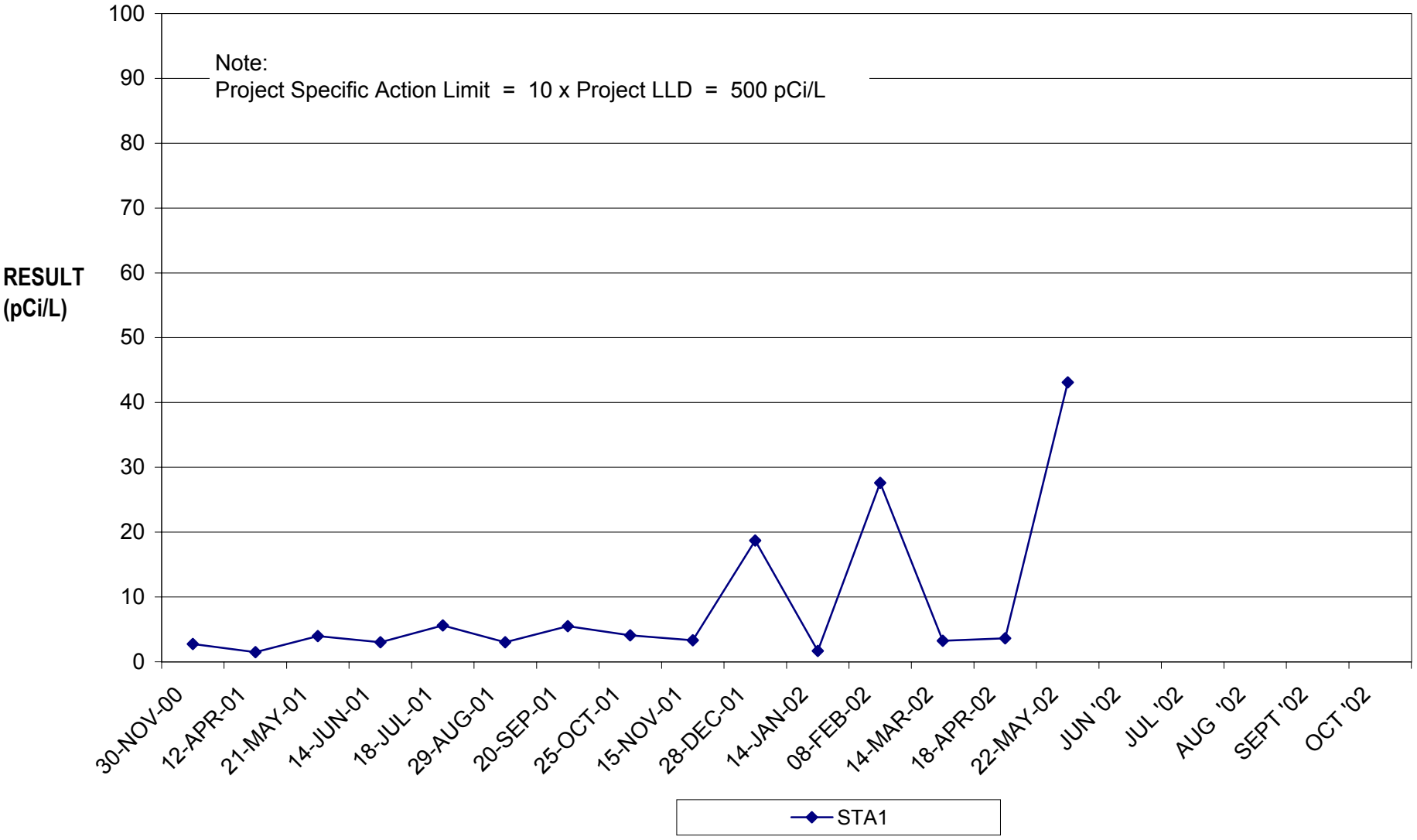


Figure 9
PBRF SURFACE WATER STATION 2:
GROSS BETA RESULTS

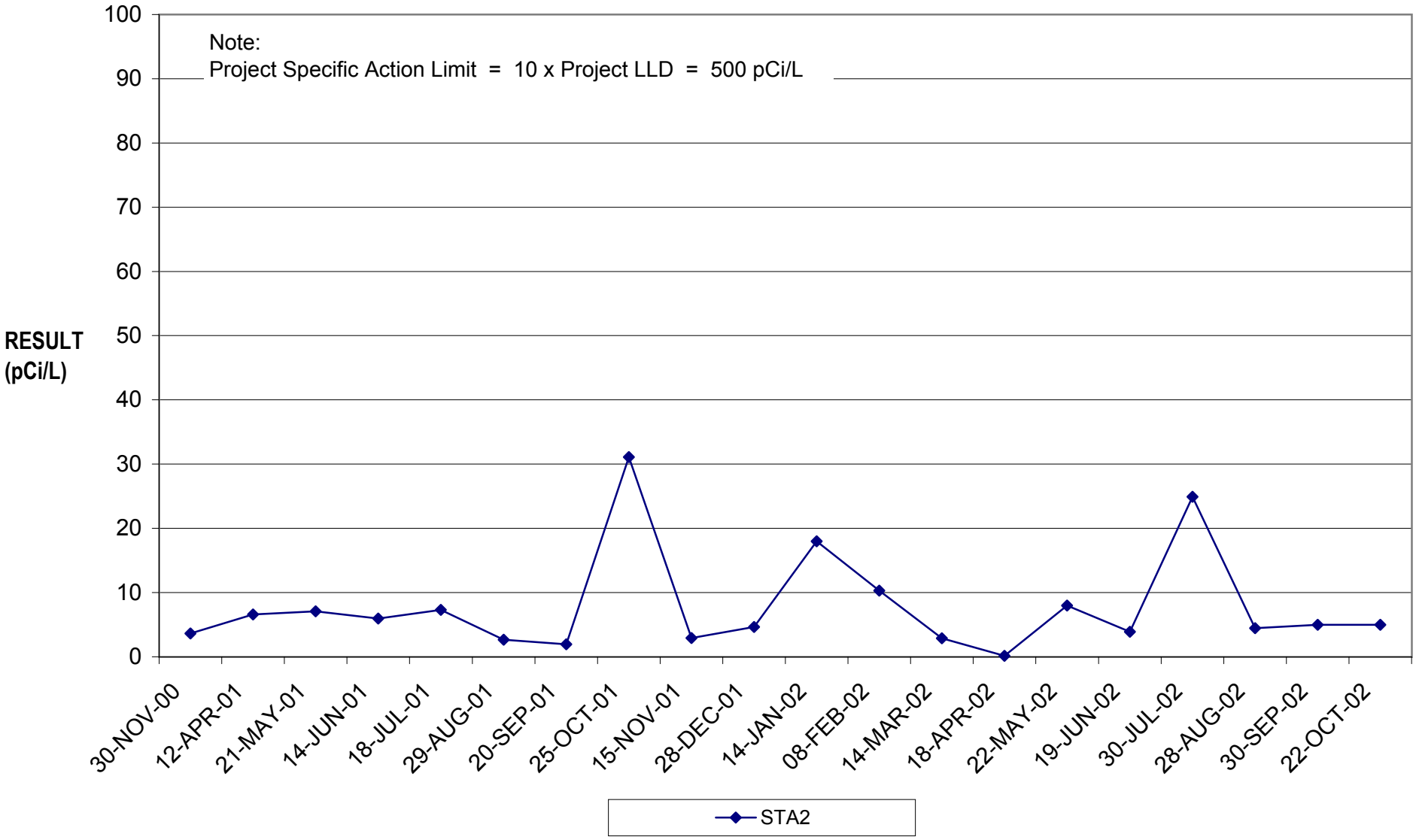


Figure 10
PBRF SURFACE WATER STATION 3:
GROSS BETA RESULTS

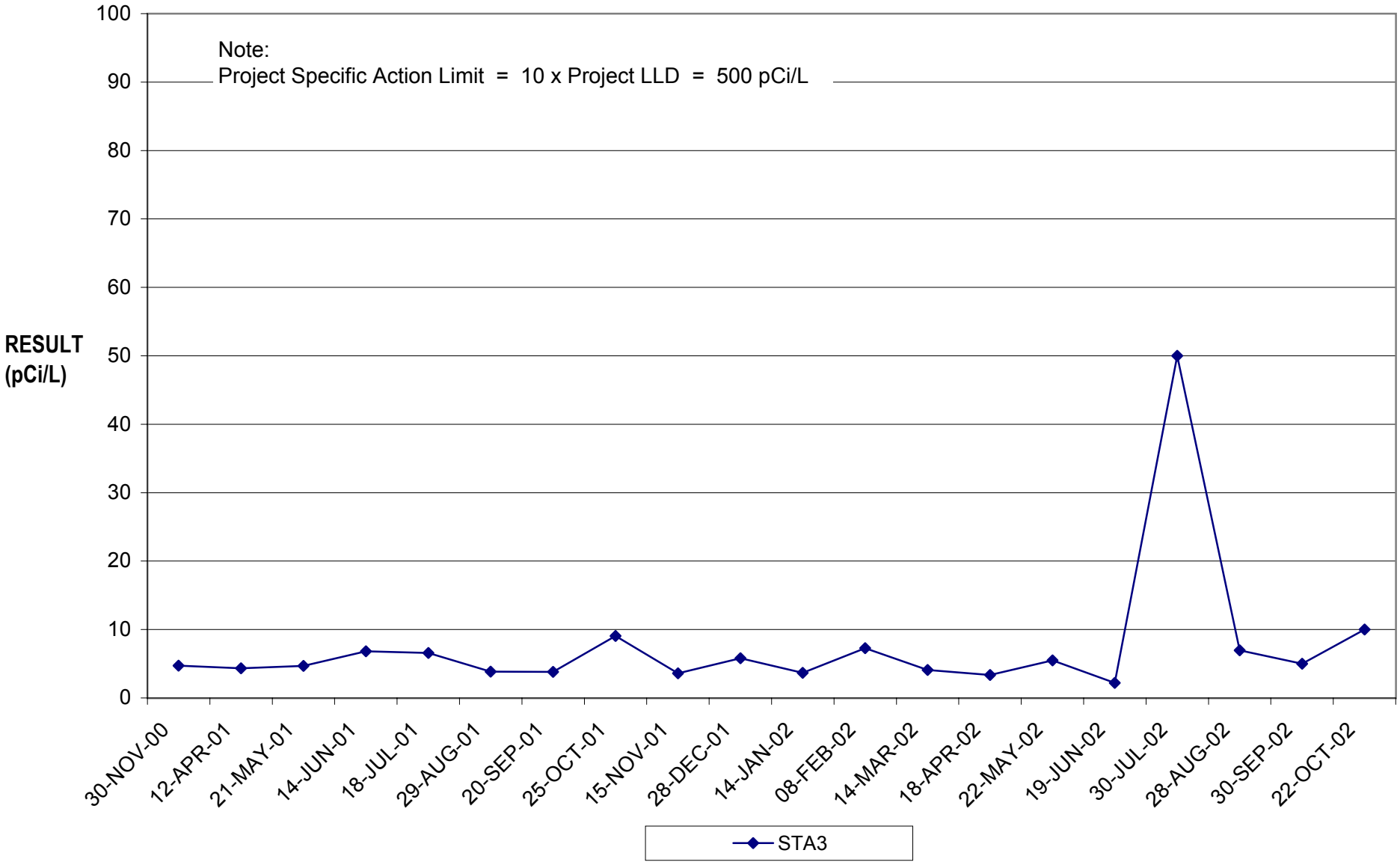


Figure 11
PBRF SURFACE WATER STATION 4:
GROSS BETA RESULTS

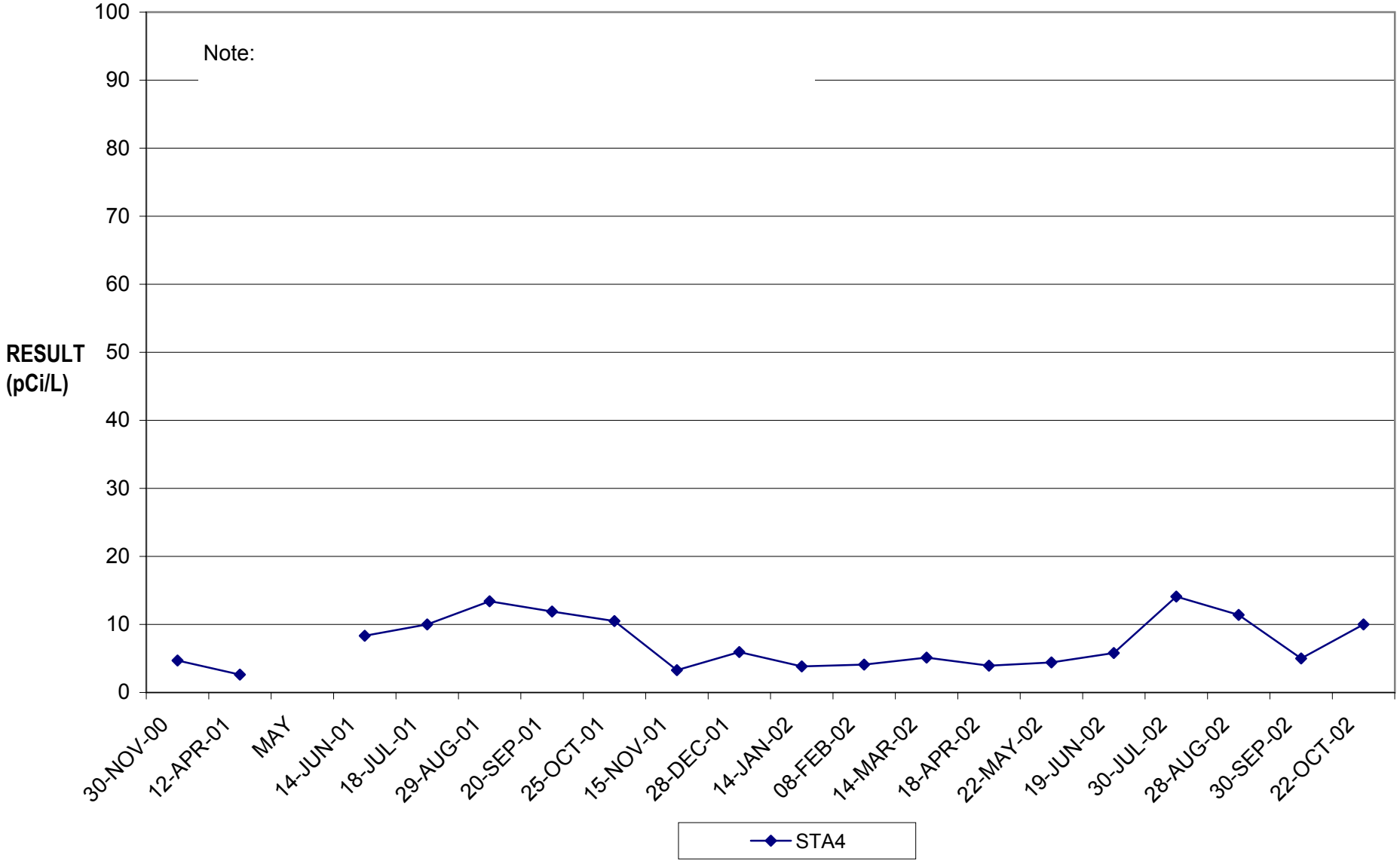


Figure 12
PBRF SURFACE WATER STATION 5:
GROSS BETA RESULTS

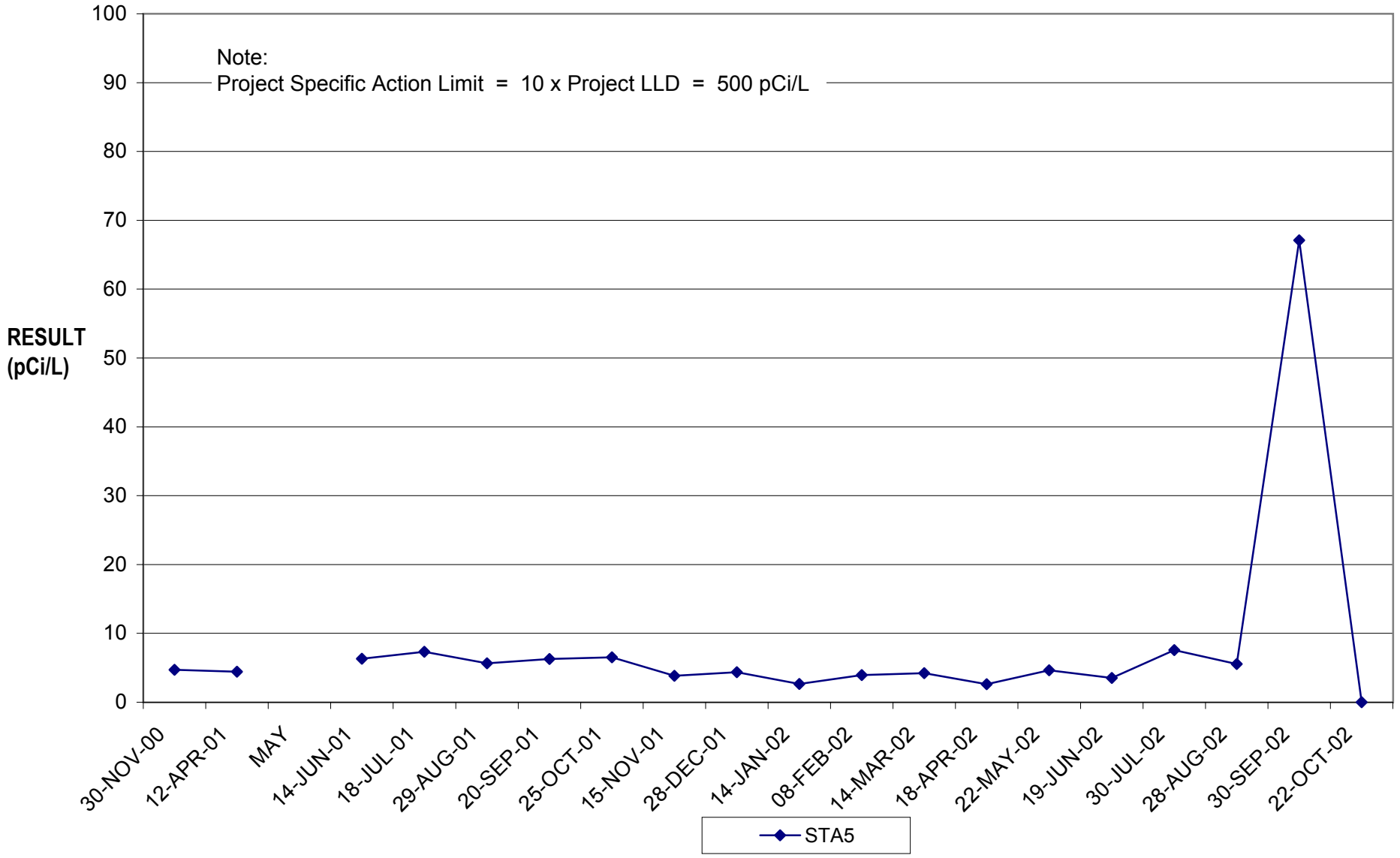


Figure 13
PBRF SURFACE WATER STATION 9:
GROSS BETA RESULTS

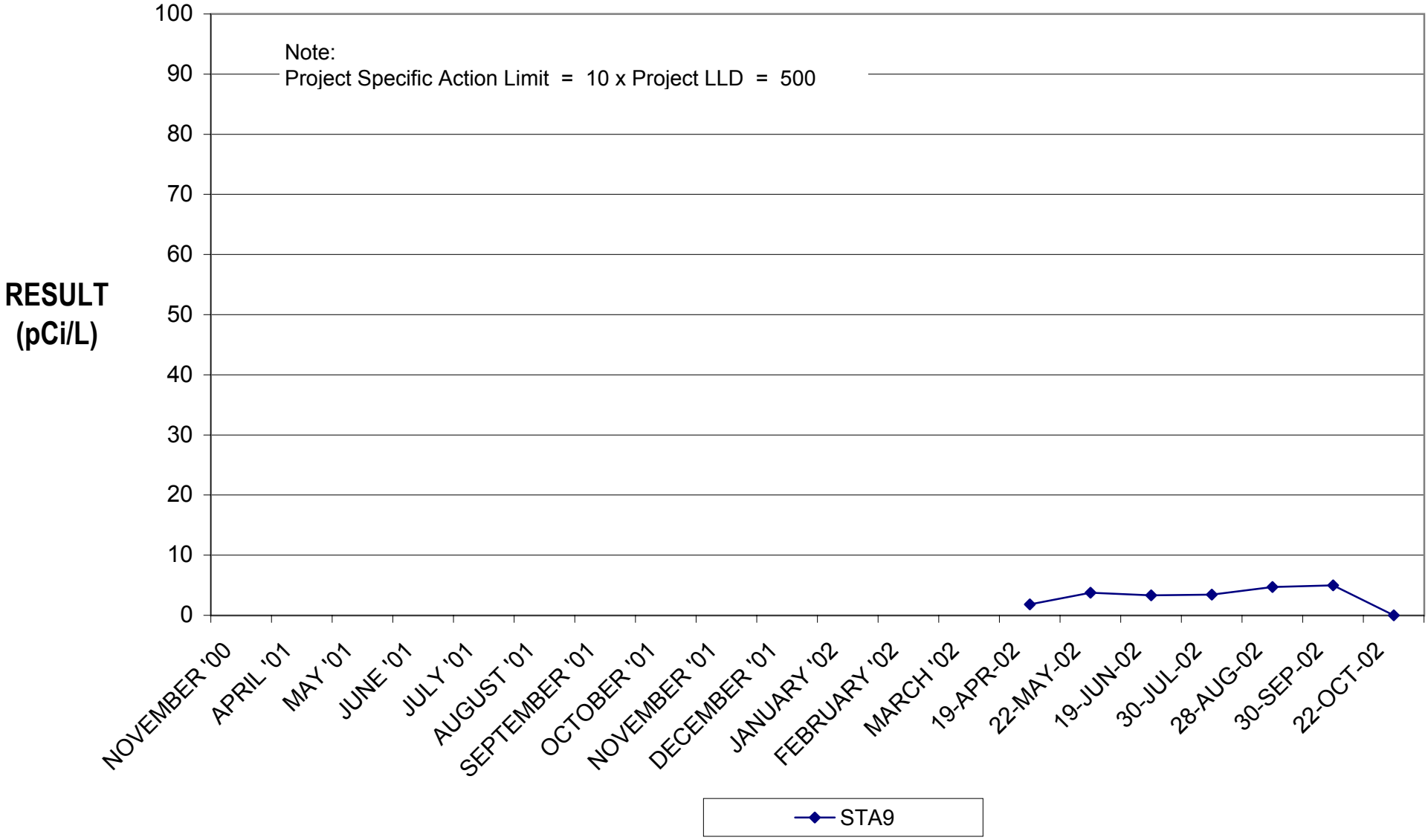


Figure 14
PBRF SURFACE WATER:
CUMULATIVE GROSS BETA RESULTS

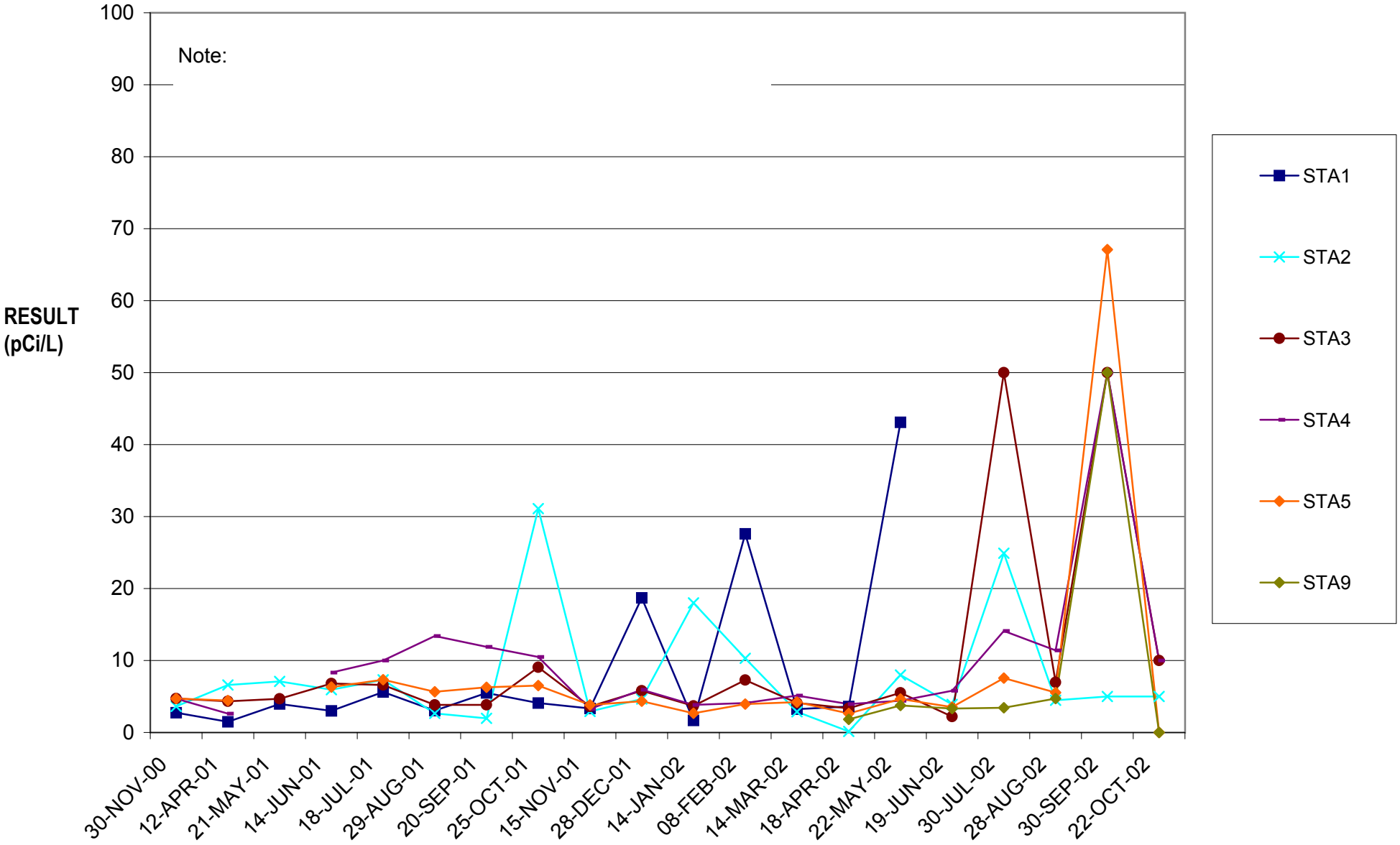


Figure 15
PBRF SEDIMENT STATION 1:
GROSS ALPHA RESULTS

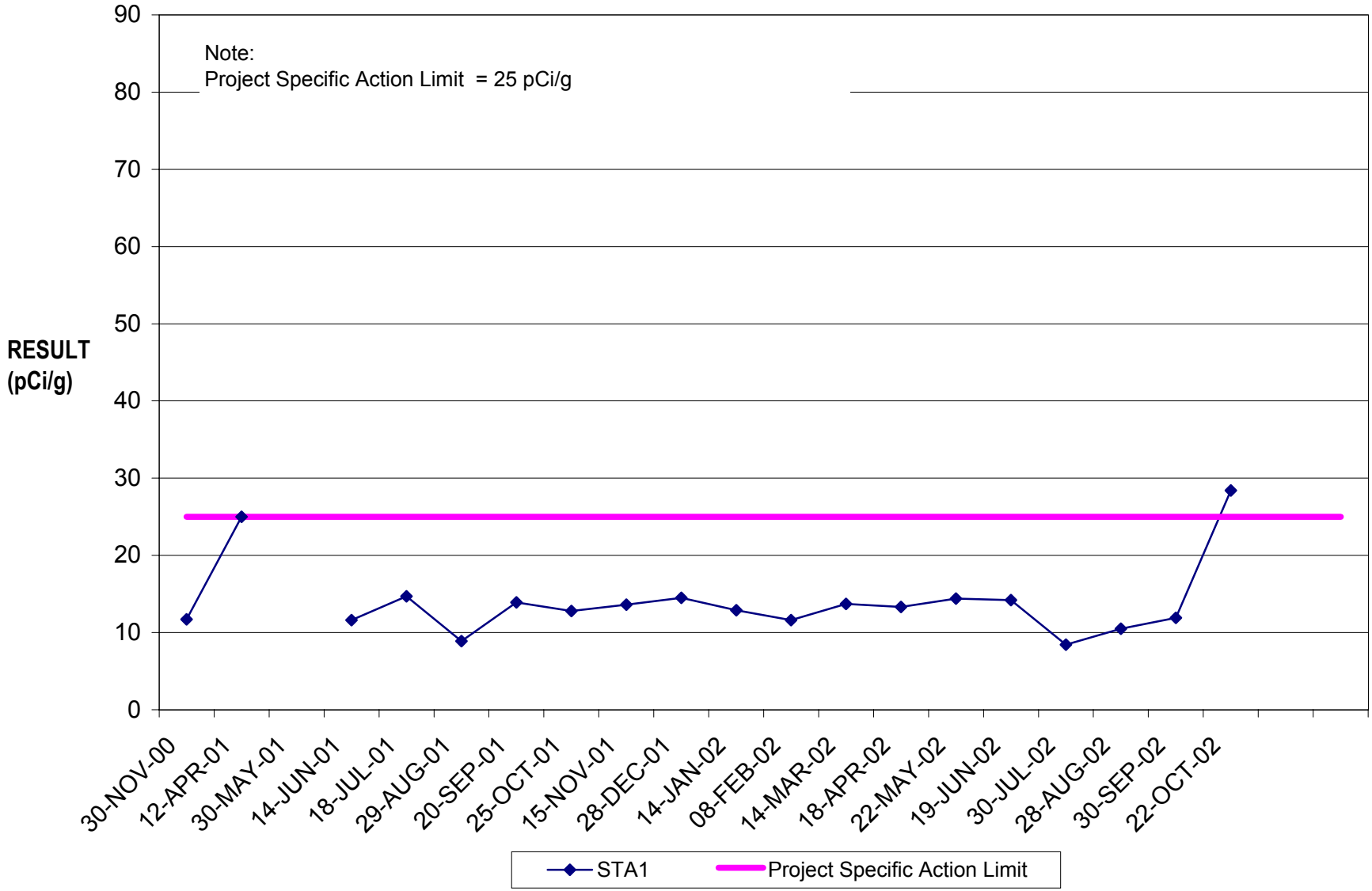


Figure 16
PBRF SEDIMENT STATION 2:
GROSS ALPHA RESULTS

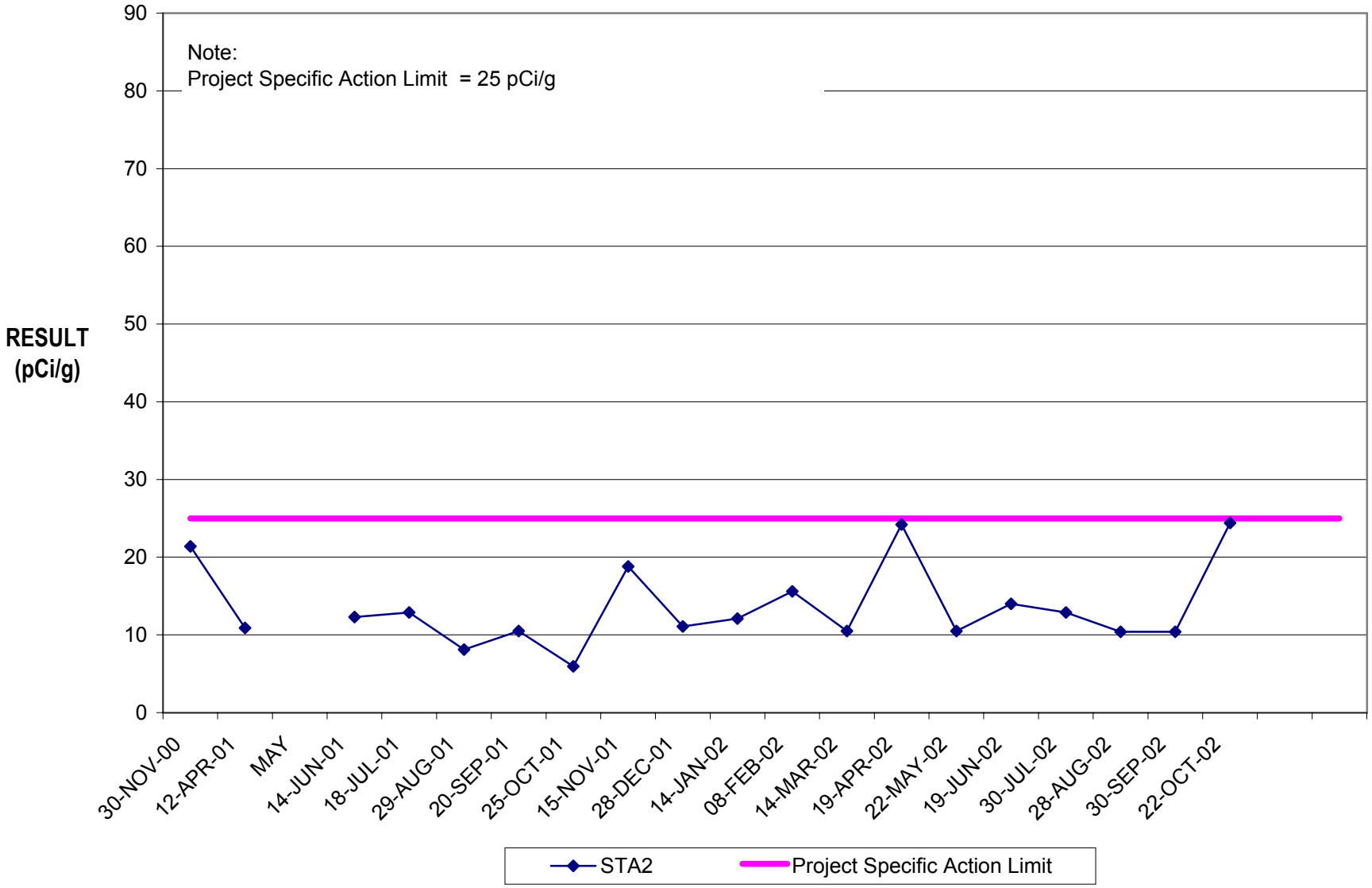


Figure 17
PBRF SEDIMENT STATION 3:
GROSS ALPHA RESULTS

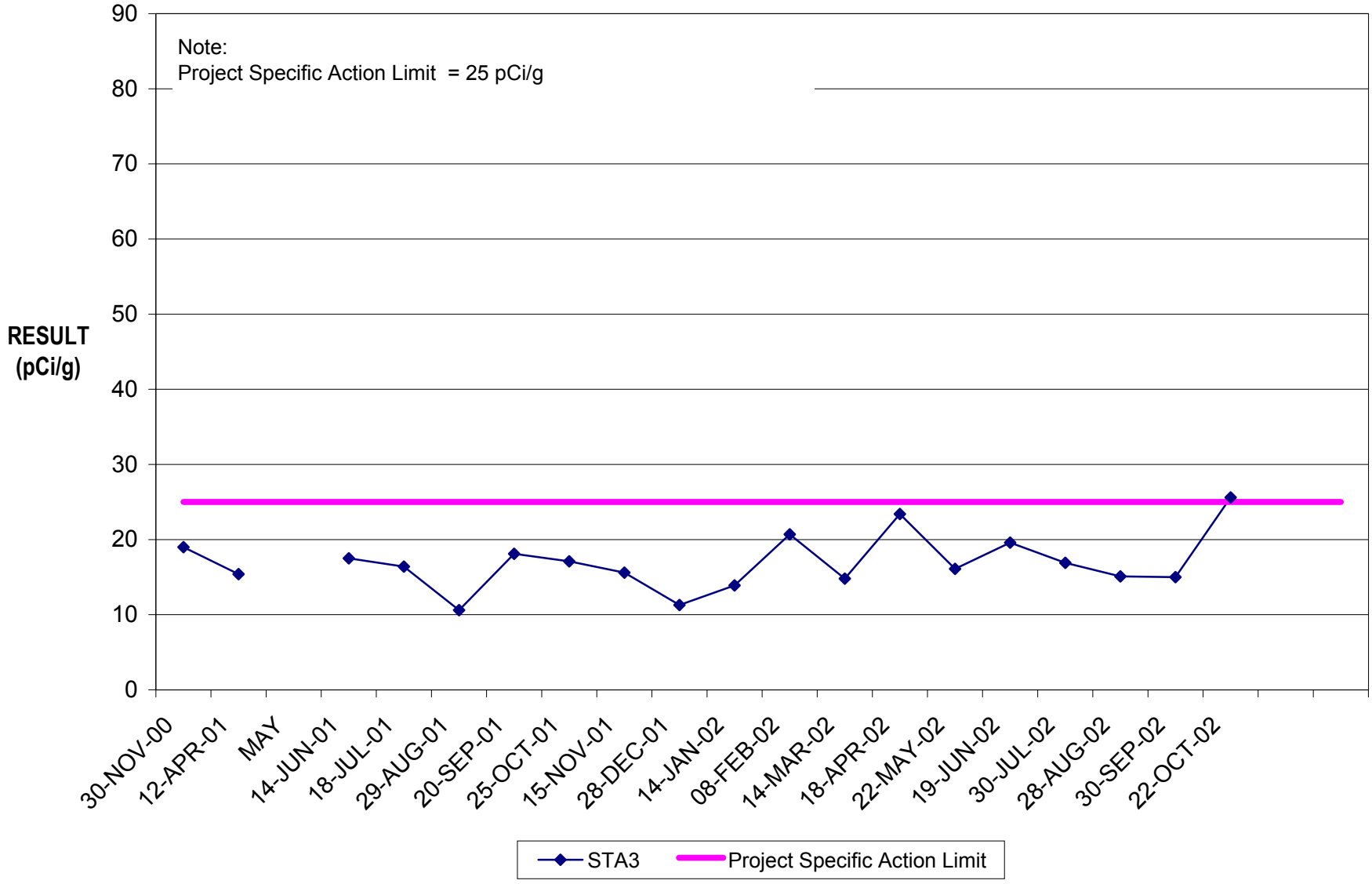


Figure 18
PBRF SEDIMENT STATION 4:
GROSS ALPHA RESULTS

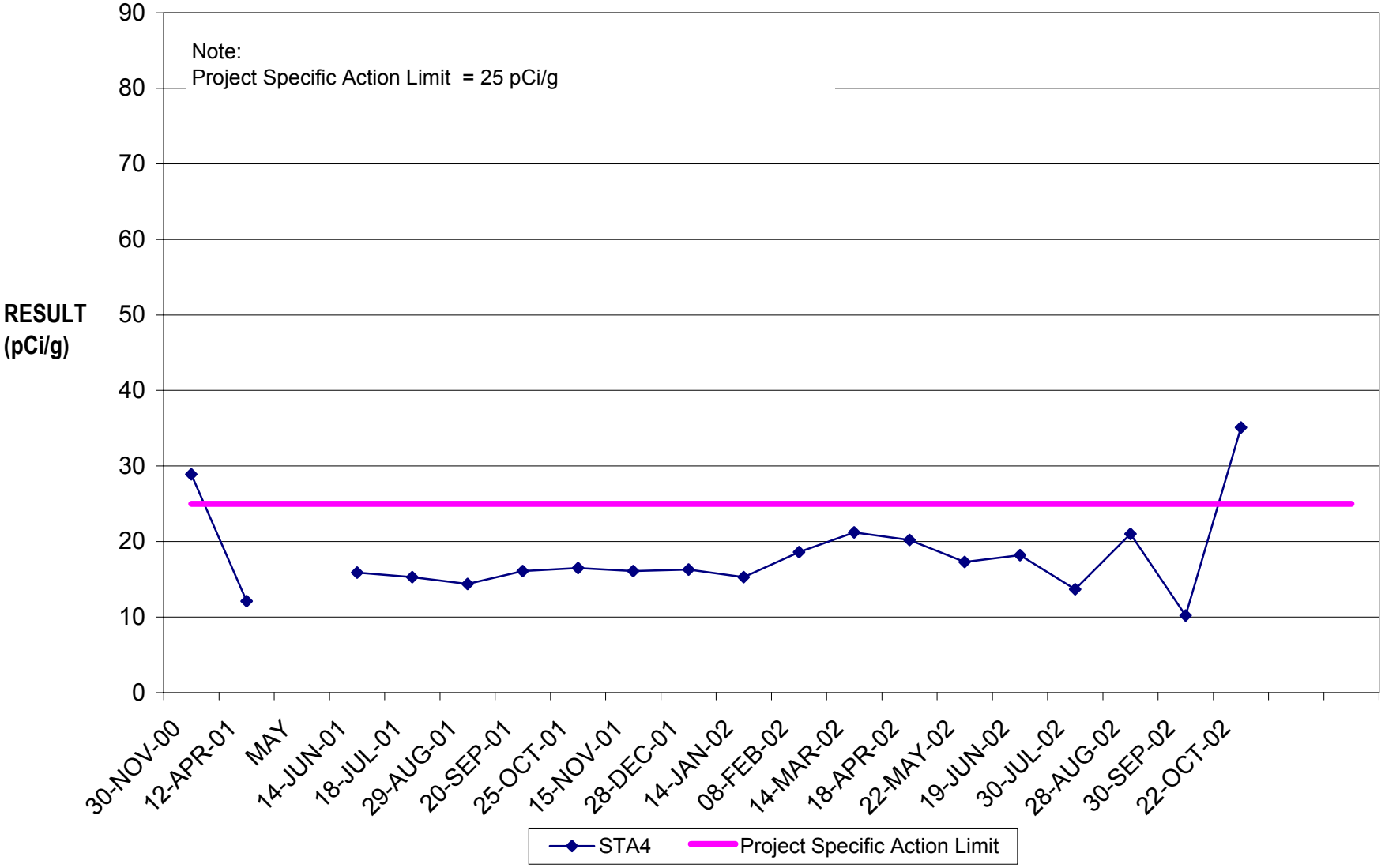


Figure 19
PBRF SEDIMENT STATION 5:
GROSS ALPHA RESULTS

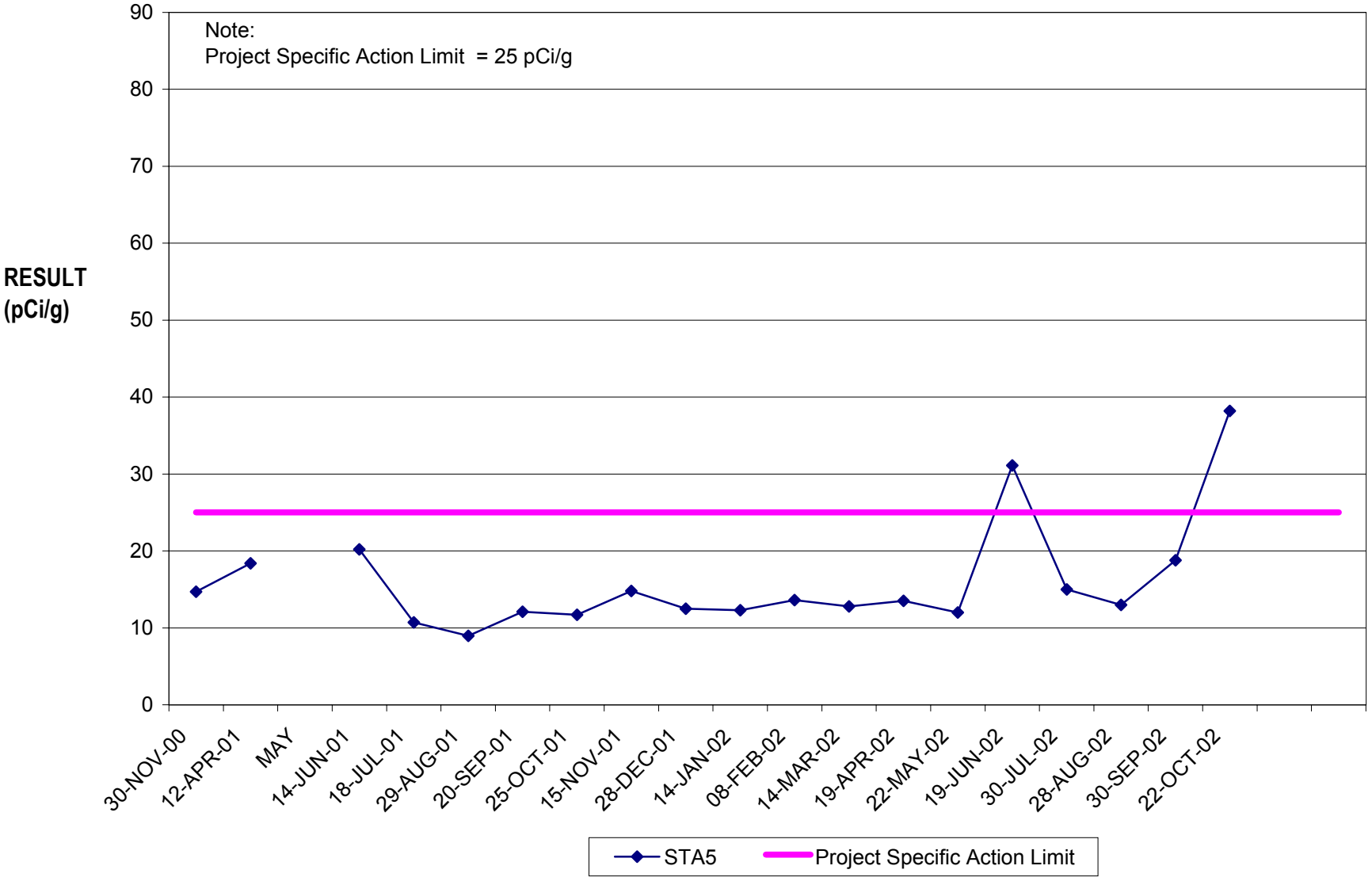


Figure 20
PBRF SEDIMENT STATION 9:
GROSS ALPHA RESULTS

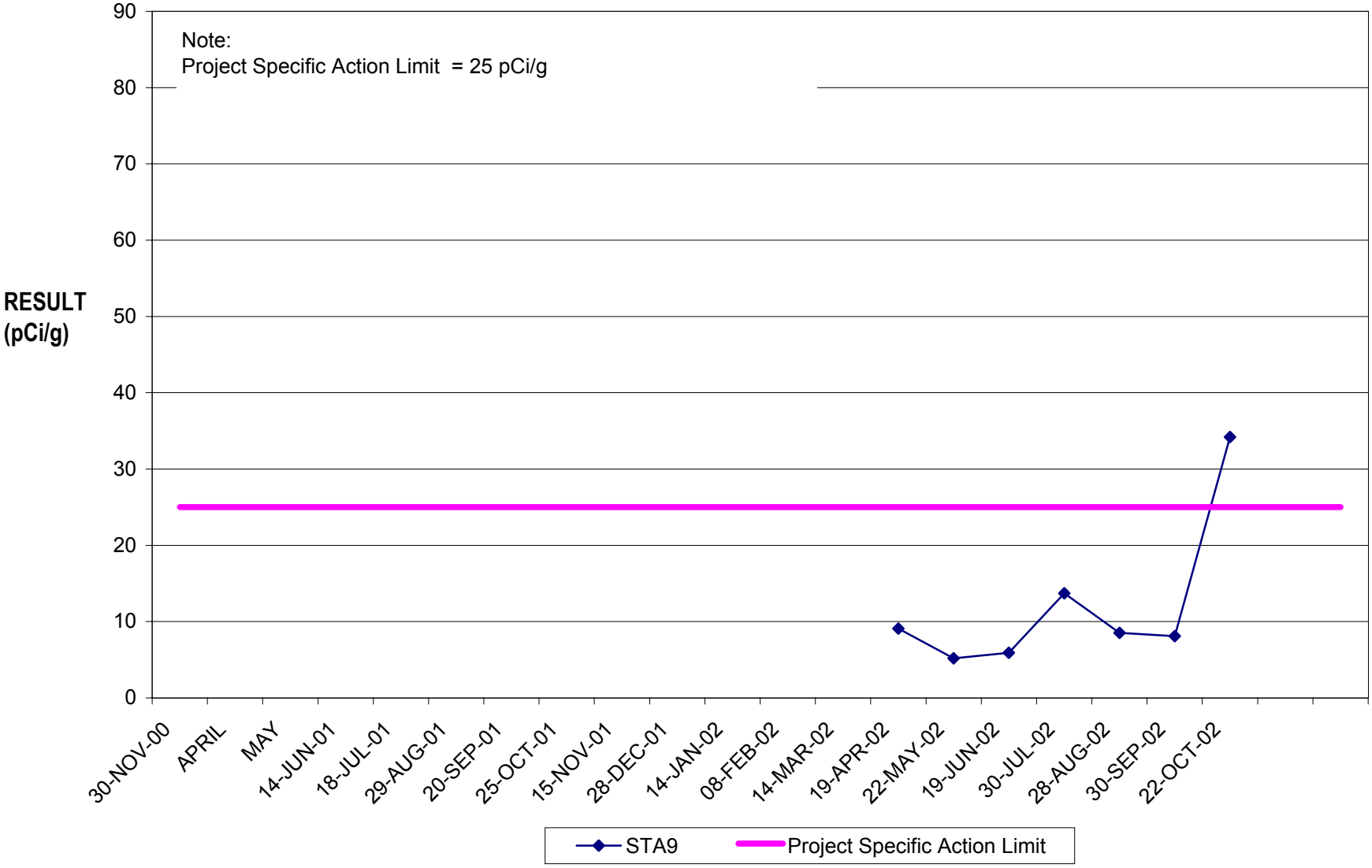


Figure 21
PBRF SEDIMENT:
GROSS ALPHA RESULTS

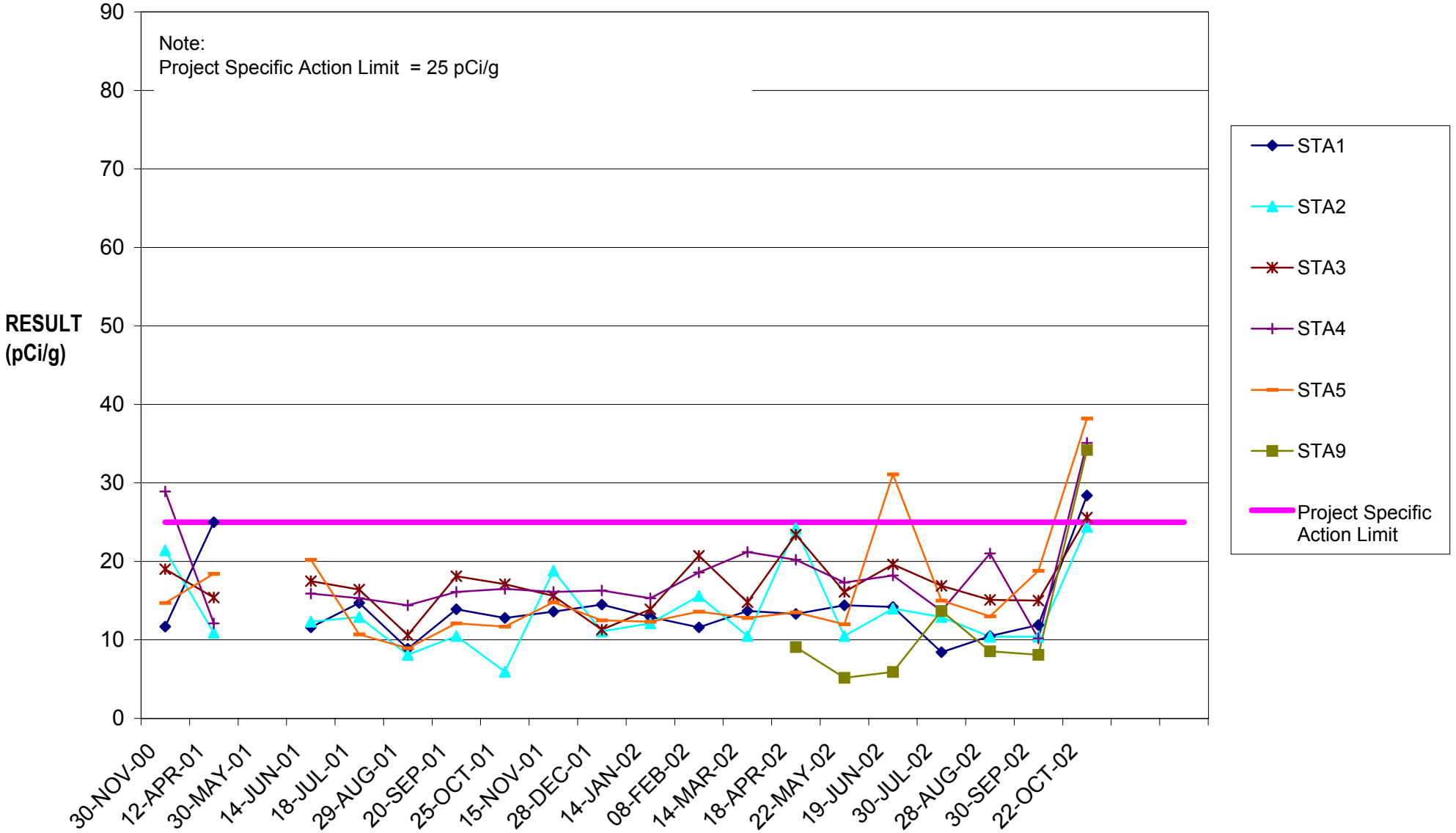


Figure 22
PBRF SEDIMENT STATION 1:
GROSS BETA RESULTS

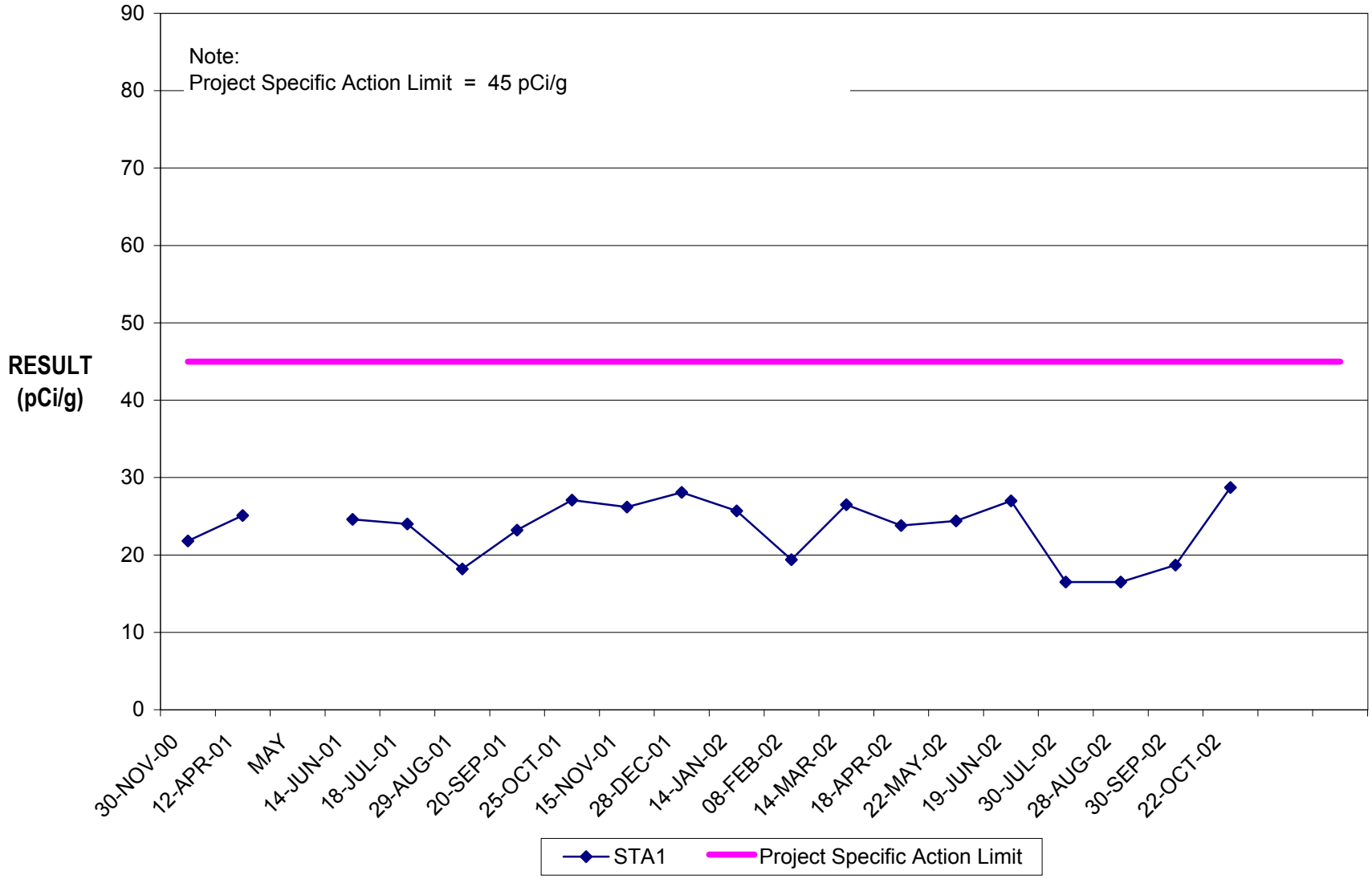


Figure 23
PBRF SEDIMENT STATION 2:
GROSS BETA RESULTS

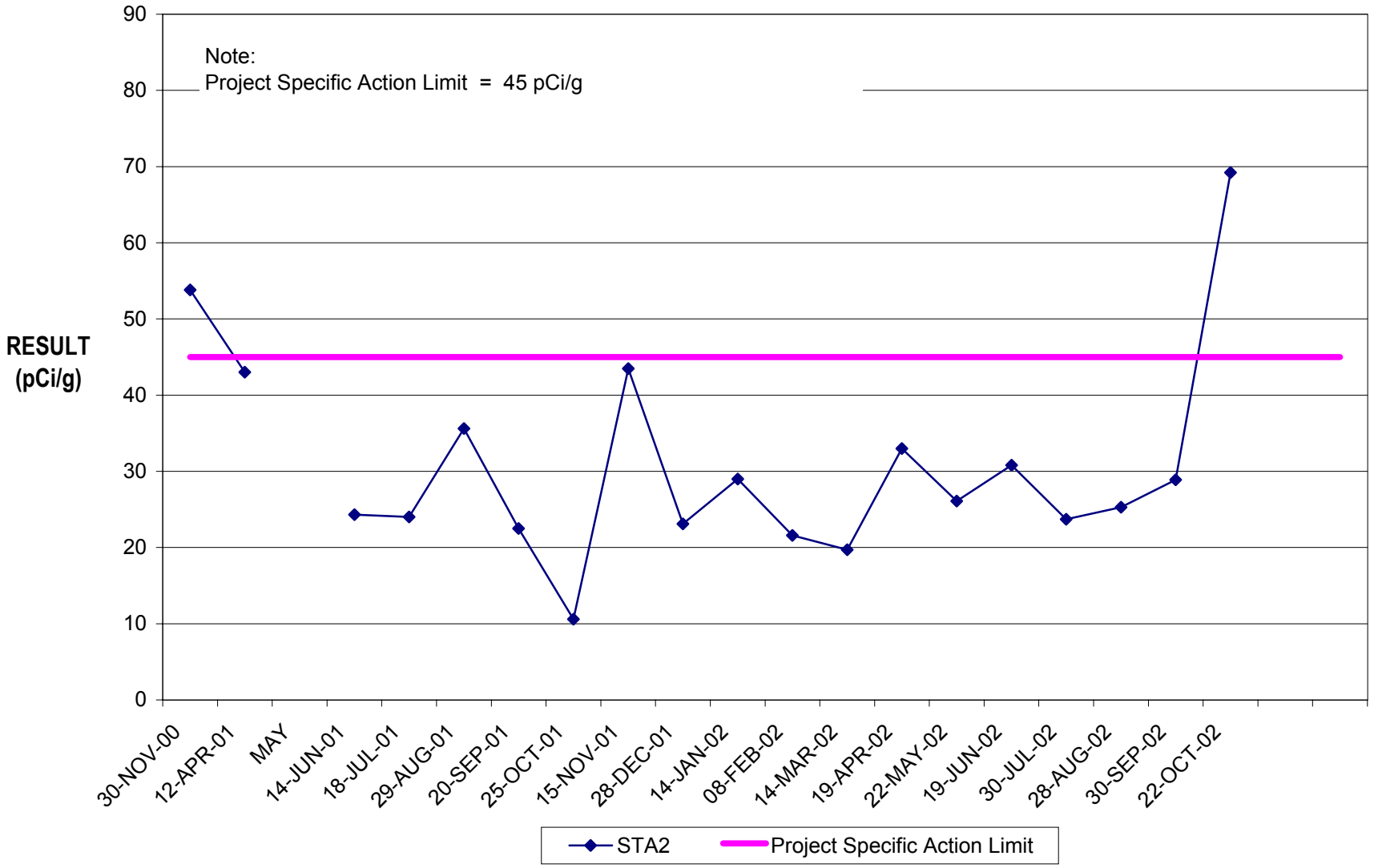


Figure 24
PBRF SEDIMENT STATION 3:
GROSS BETA RESULTS

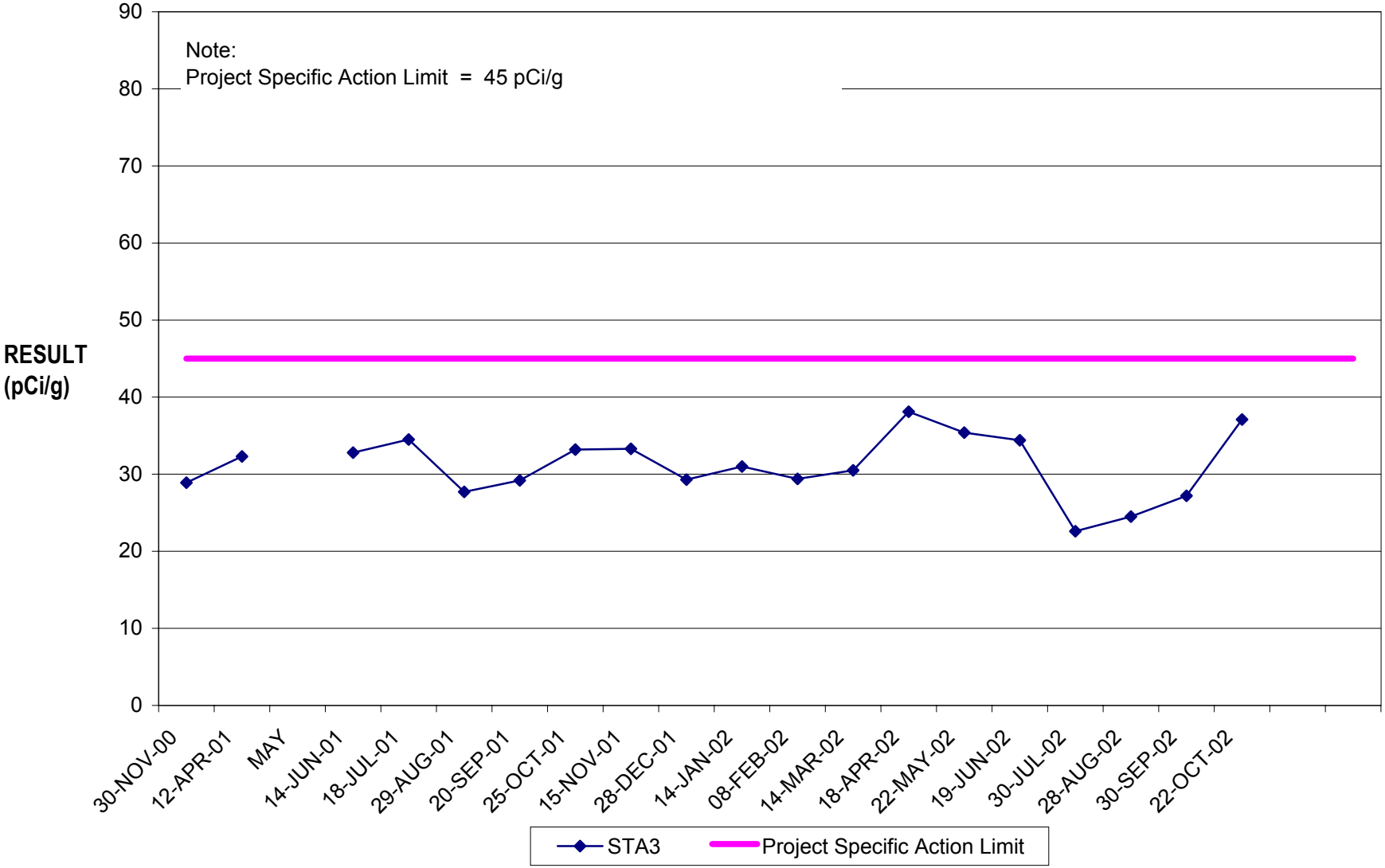


Figure 25
PBRF SEDIMENT STATION 4:
GROSS BETA RESULTS

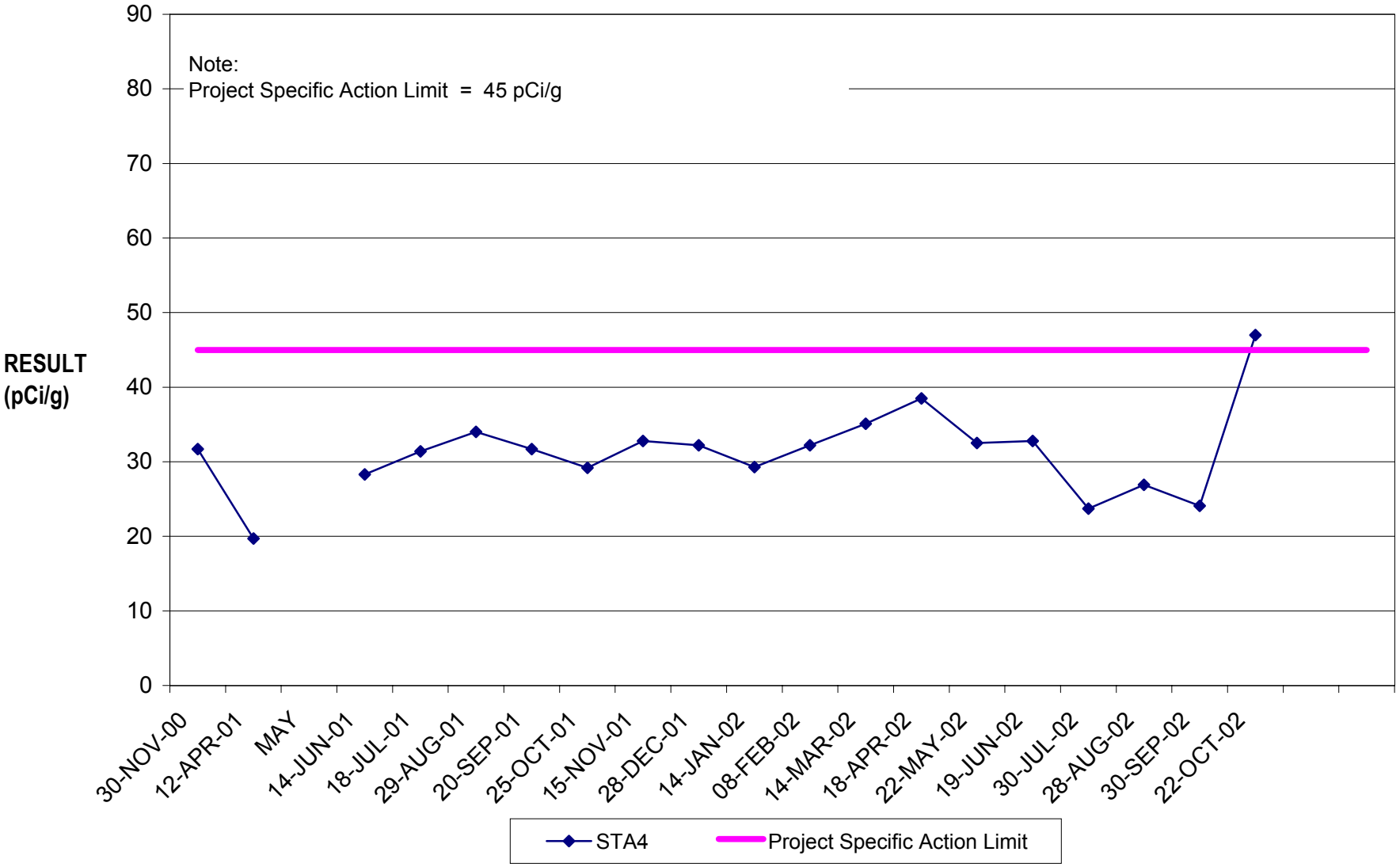


Figure 26
PBRF SEDIMENT STATION 5:
GROSS BETA RESULTS

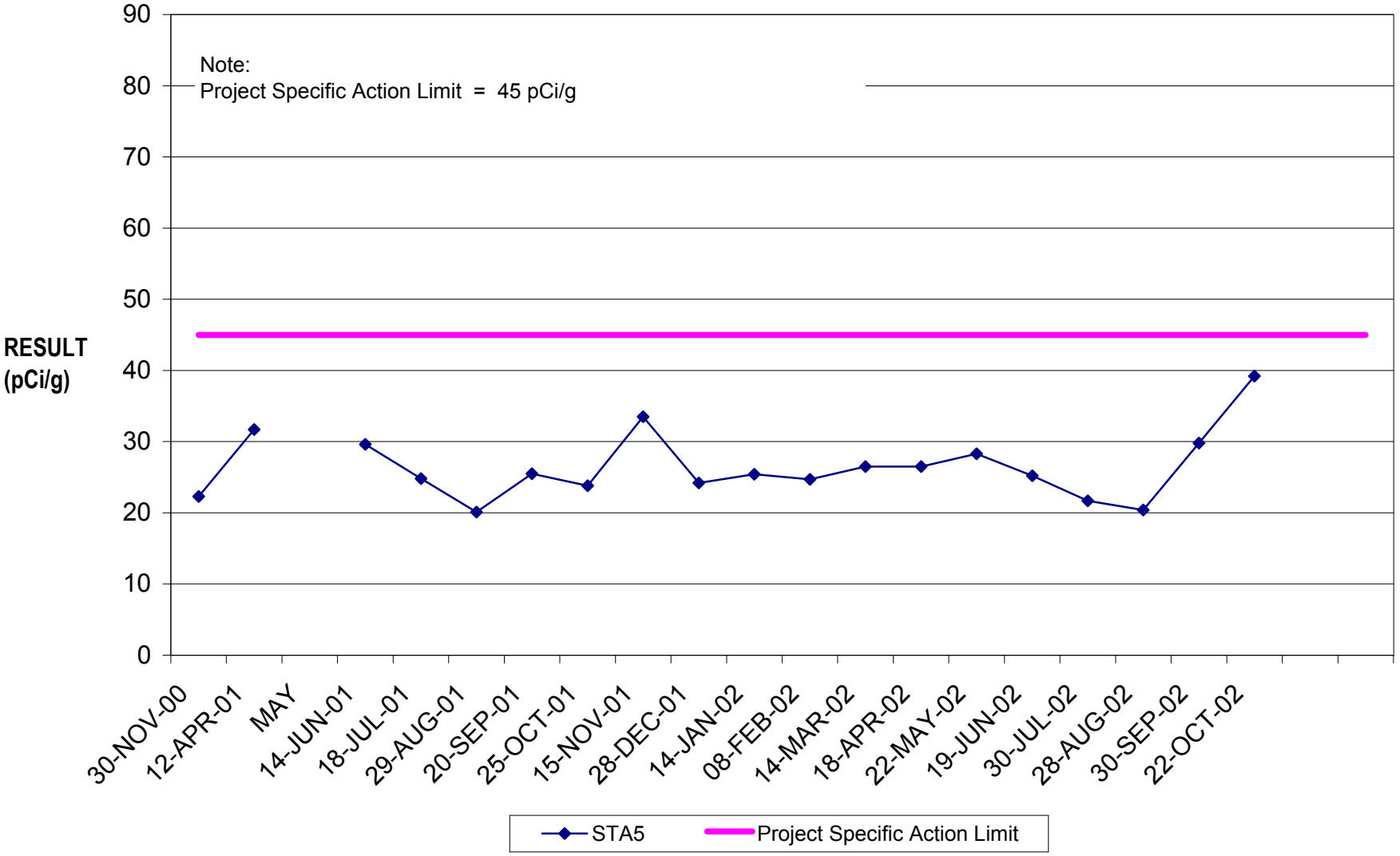


Figure 27
PBRF SEDIMENT STATION 9:
GROSS BETA RESULTS

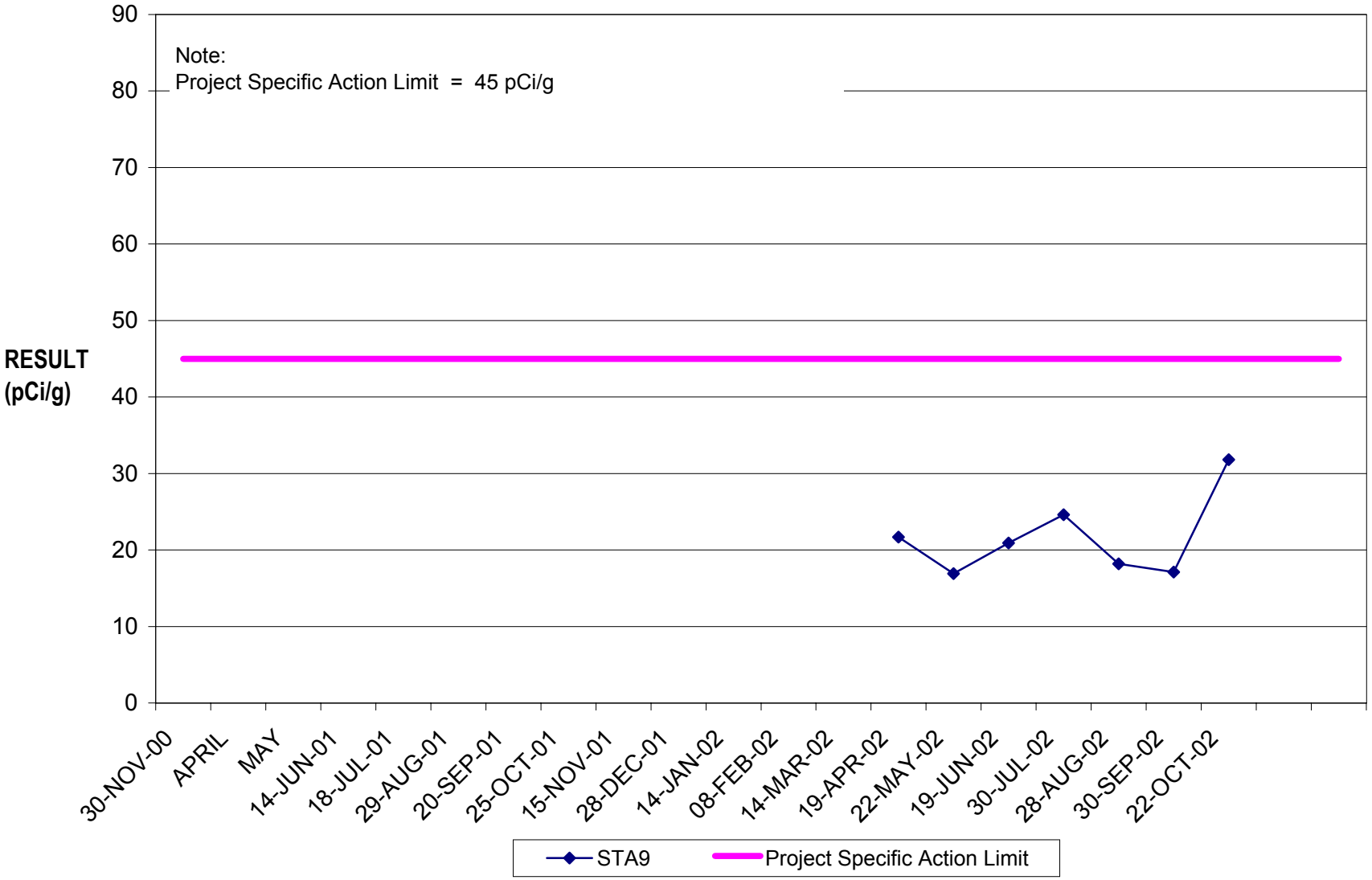
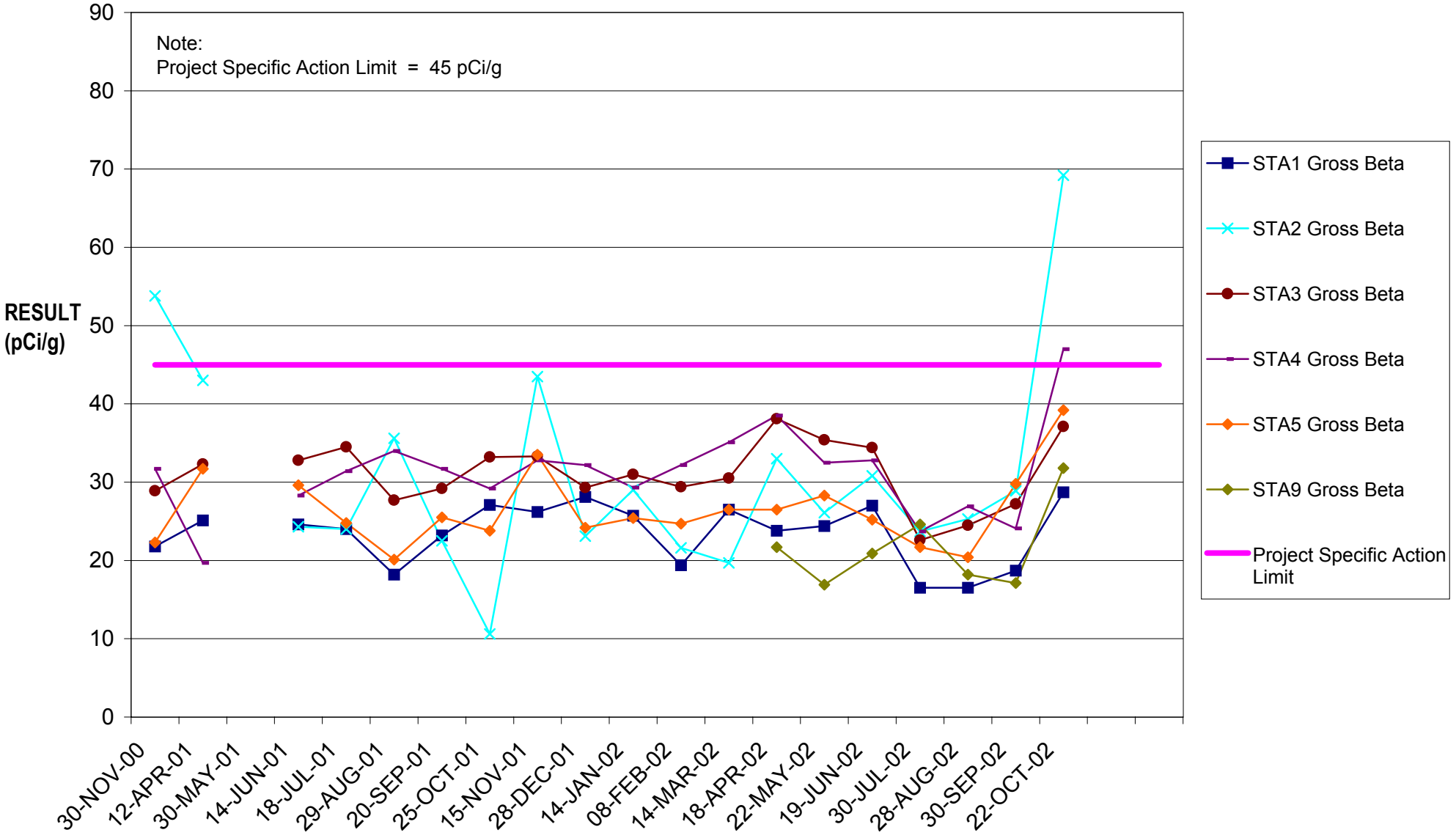


Figure 28
PBRF SEDIMENT:
GROSS BETA RESULTS



APPENDIX B

GROUNDWATER AND SUMP RESULTS

Pages B-1 to B-2

Table 1
Groundwater Monitoring Results
Annual Sampling - October 2002

Well/Sump ID	Gross Alpha pCi/L	Gross Beta pCi/L
Shallow Groundwater Monitoring Wells		
RA-01	11.4	144.0
RA-02	6.8	160.0
MW-02	13.5	105.0
RA-03	11.5	< 2.0
RA-04	13.2	72.0
RA-05	11.1	7.01
RA-06	**21.0**	78.0
MW-03	9.0	10.1
MW-04	14.7	190.0
MW-06	10.2	32.6
Shallow Building Foundation Sumps		
Rx25	< 2	< 50
HRA25	NOT SAMPLED	NOT SAMPLED
SEB15	14.6	20.0
Rx15	0.0	250.0
Deep Groundwater Monitoring Wells		
Rx01	< 4.7	11.2
Rx03	< 2.8	20.3
MW-05	<1.44	< 29.0
MW-05 Duplicate	11.3	<59.0
Rx02	< 1.6	7.2
Rx04	< 3.6	6.2
Project Specific Action Limit	20.0	500.0

APPENDIX C

FENCELINE AIR MONITORING RESULTS

Pages C-1 to C-23

Figure 1
PBRF AIR RESULTS:
STA1 GROSS ALPHA

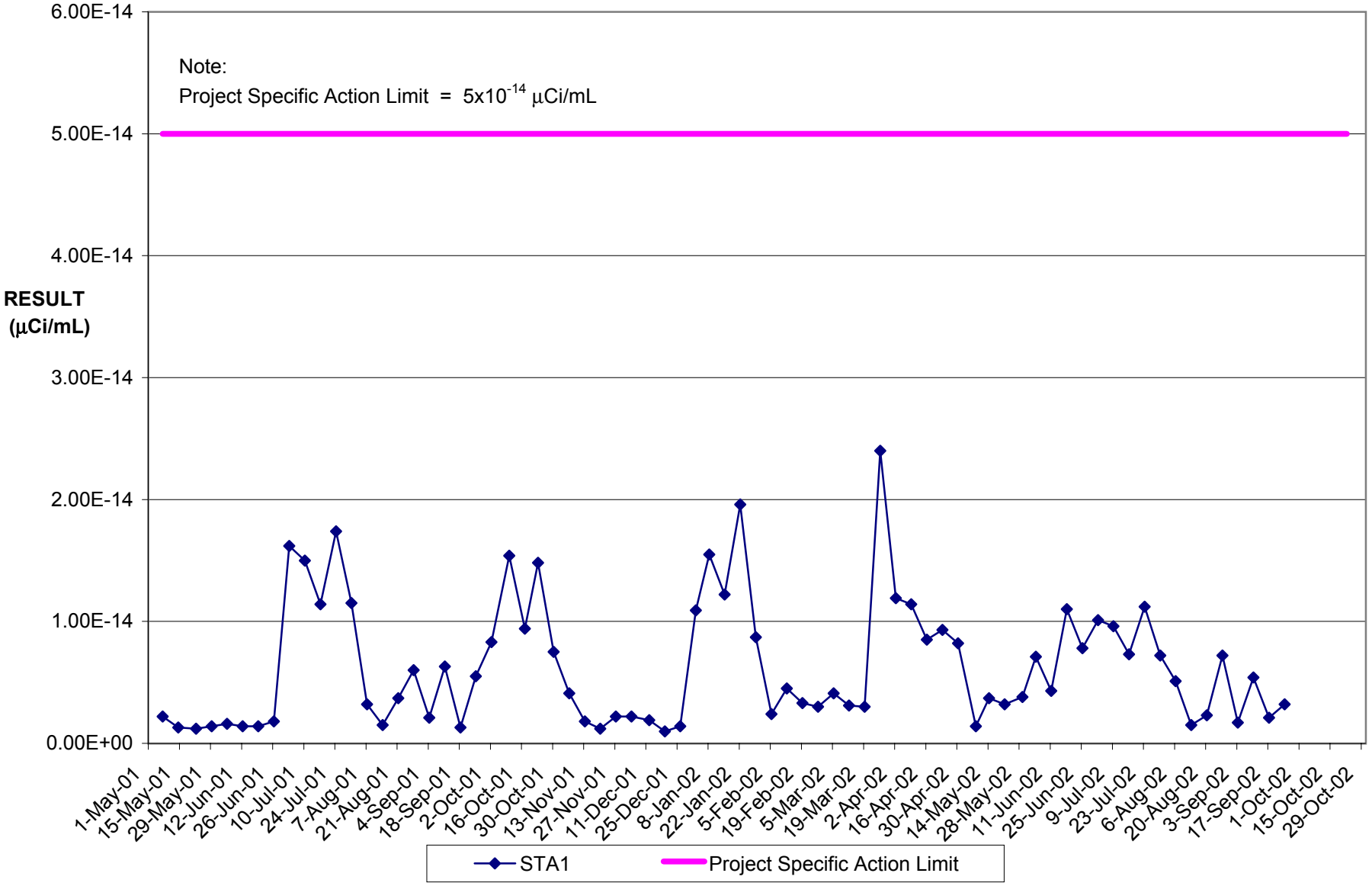


Figure 2
PBRF AIR RESULTS:
STA2 GROSS ALPHA

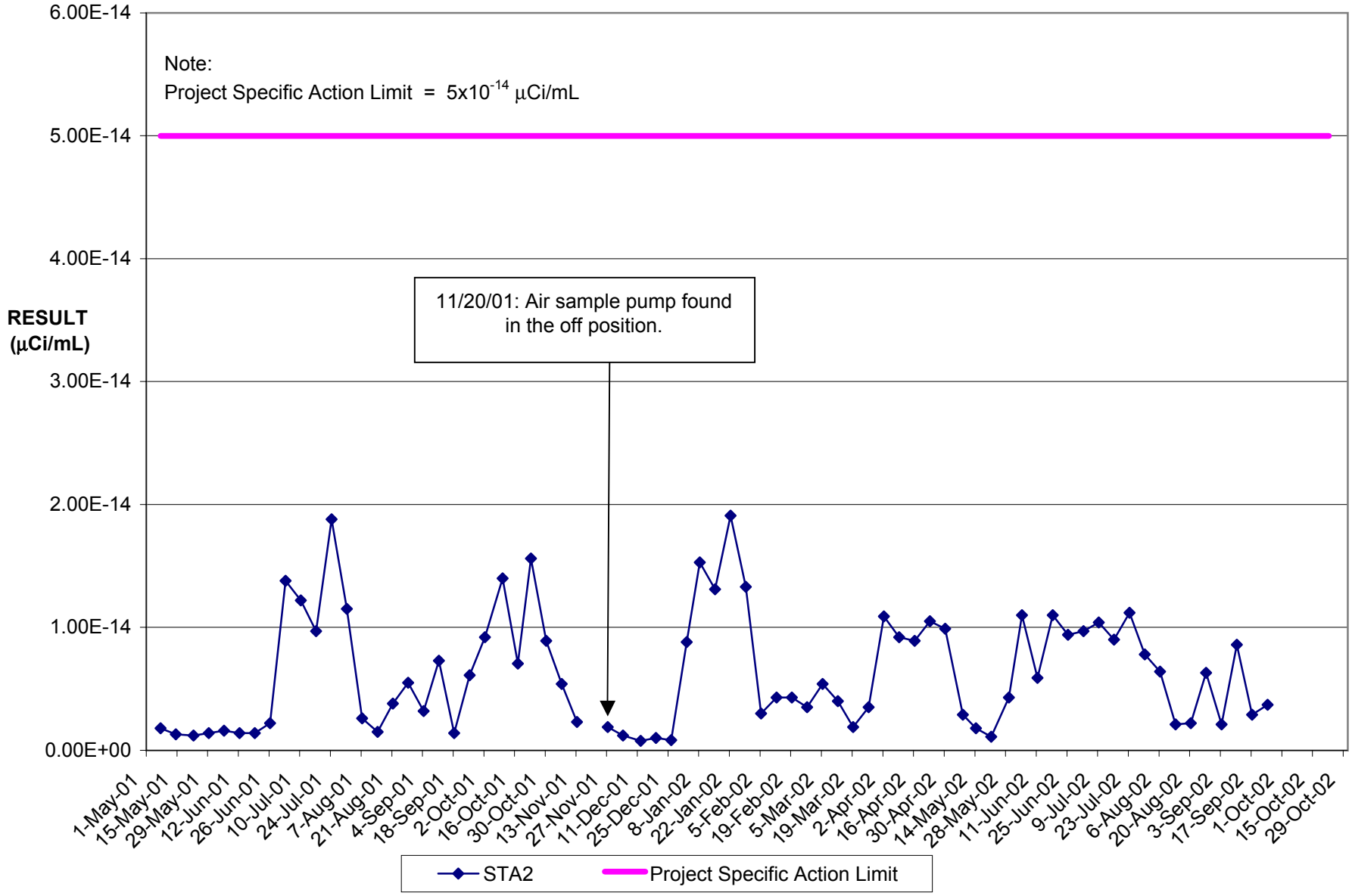


Figure 3
PBRF AIR RESULTS:
STA3 GROSS ALPHA

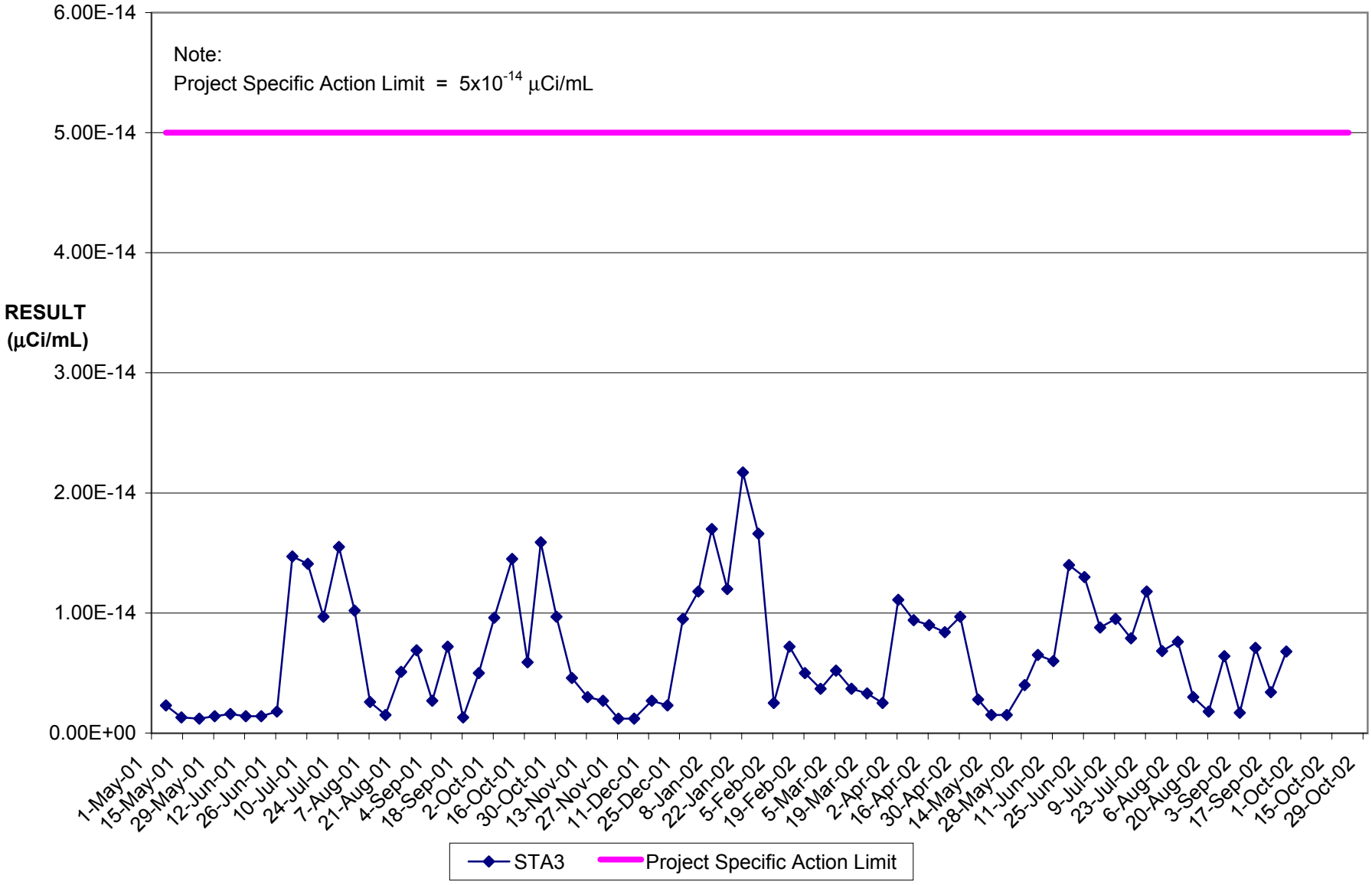


Figure 4
PBRF AIR RESULTS:
STA4 GROSS ALPHA

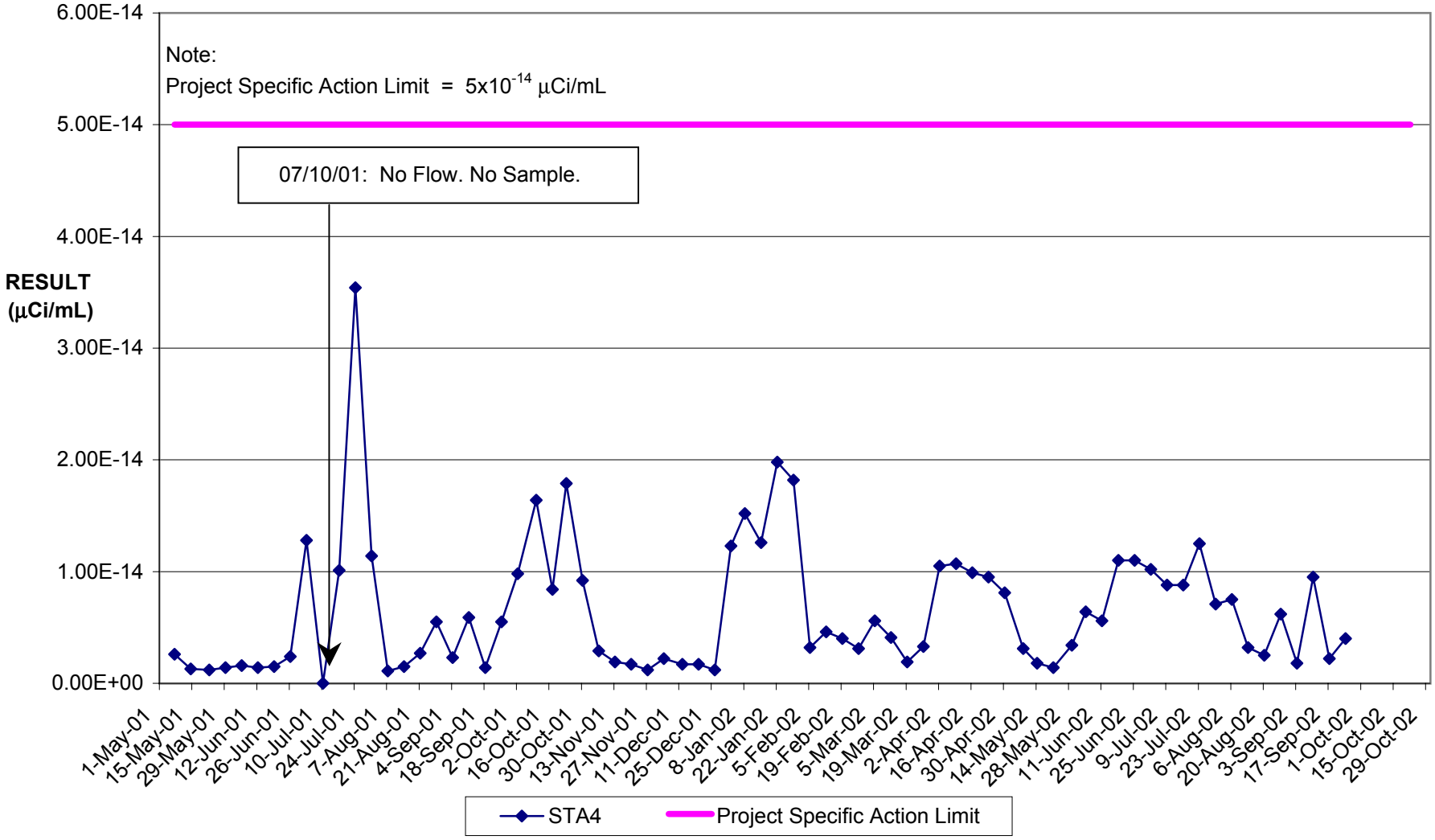


Figure 5
PBRF AIR RESULTS:
STA5 GROSS ALPHA

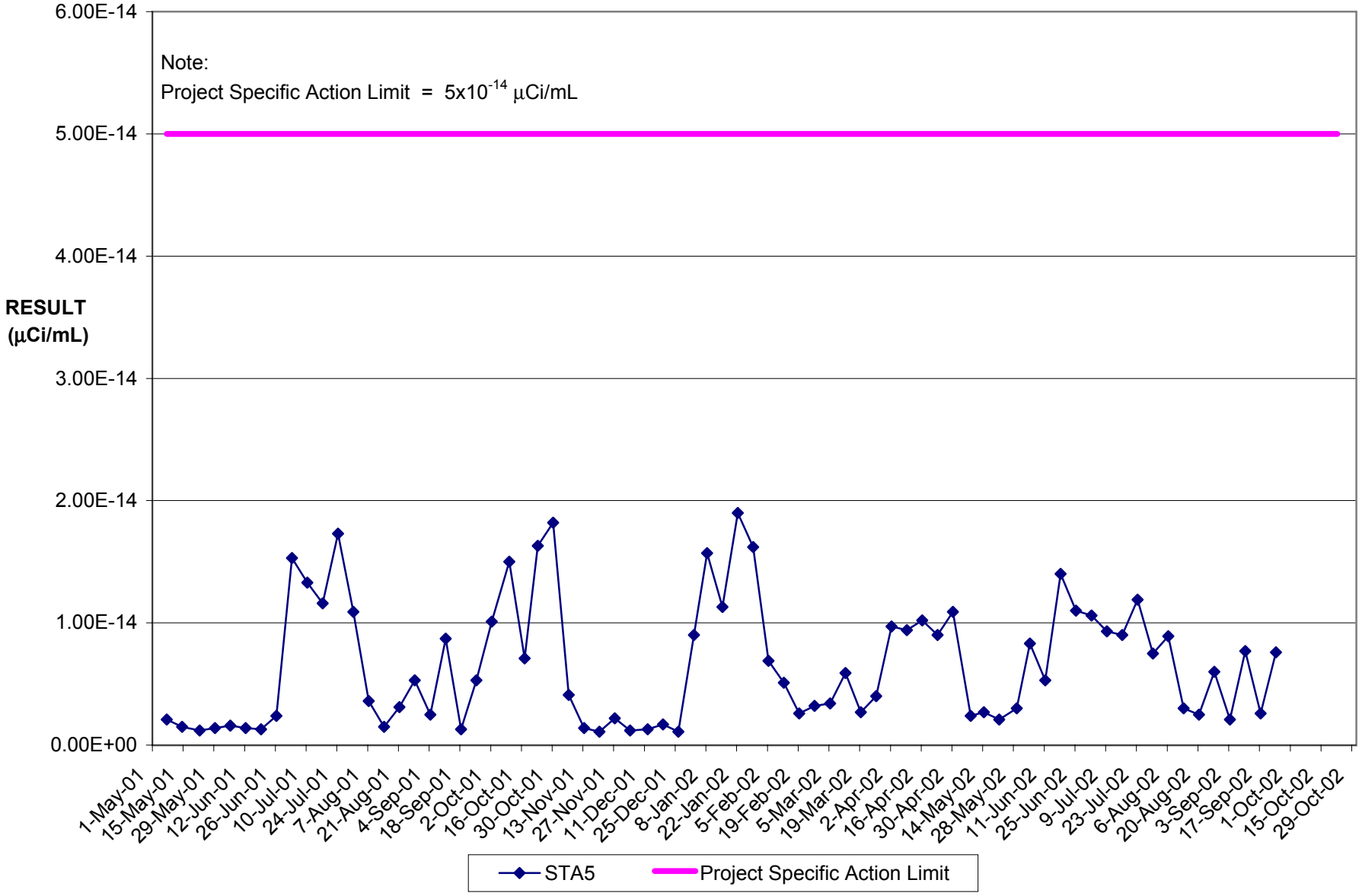


Figure 6
PBRF AIR RESULTS:
STA6 GROSS ALPHA

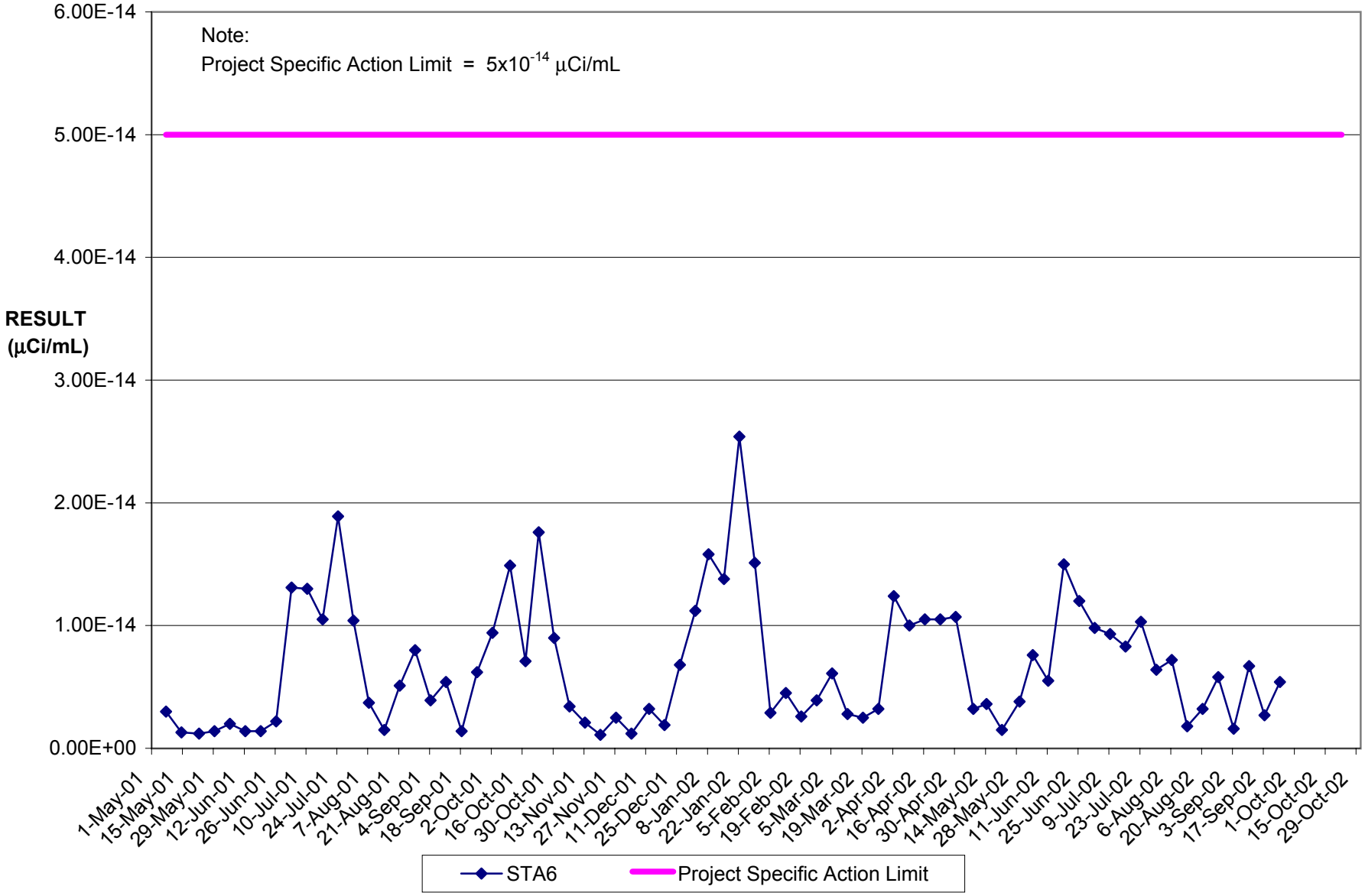


Figure 7
PBRF AIR :
CUMULATIVE GROSS ALPHA

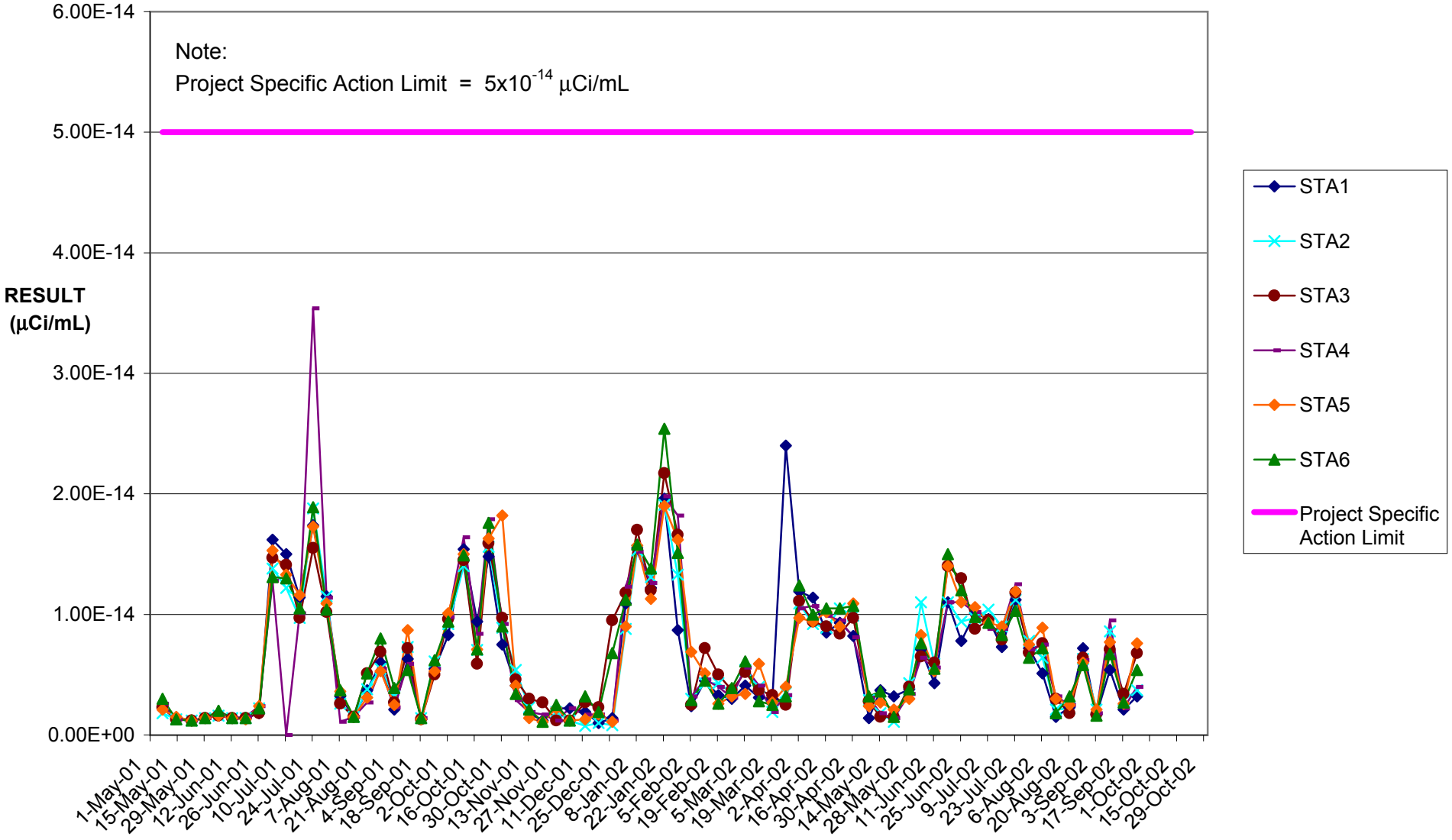


Figure 8
PBRF AIR RESULTS:
STA1 GROSS BETA

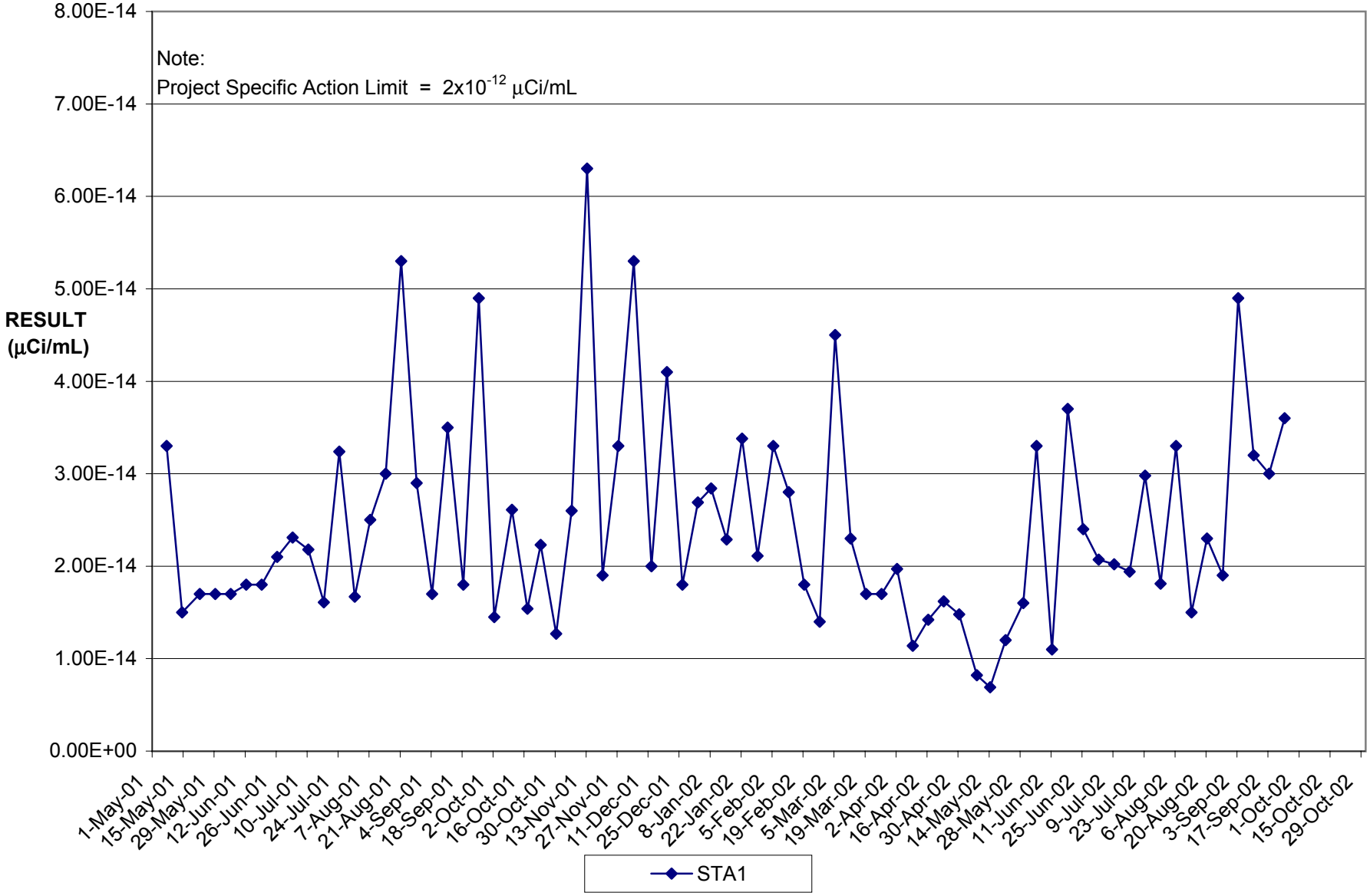


Figure 9
PBRF AIR RESULTS:
STA2 GROSS BETA

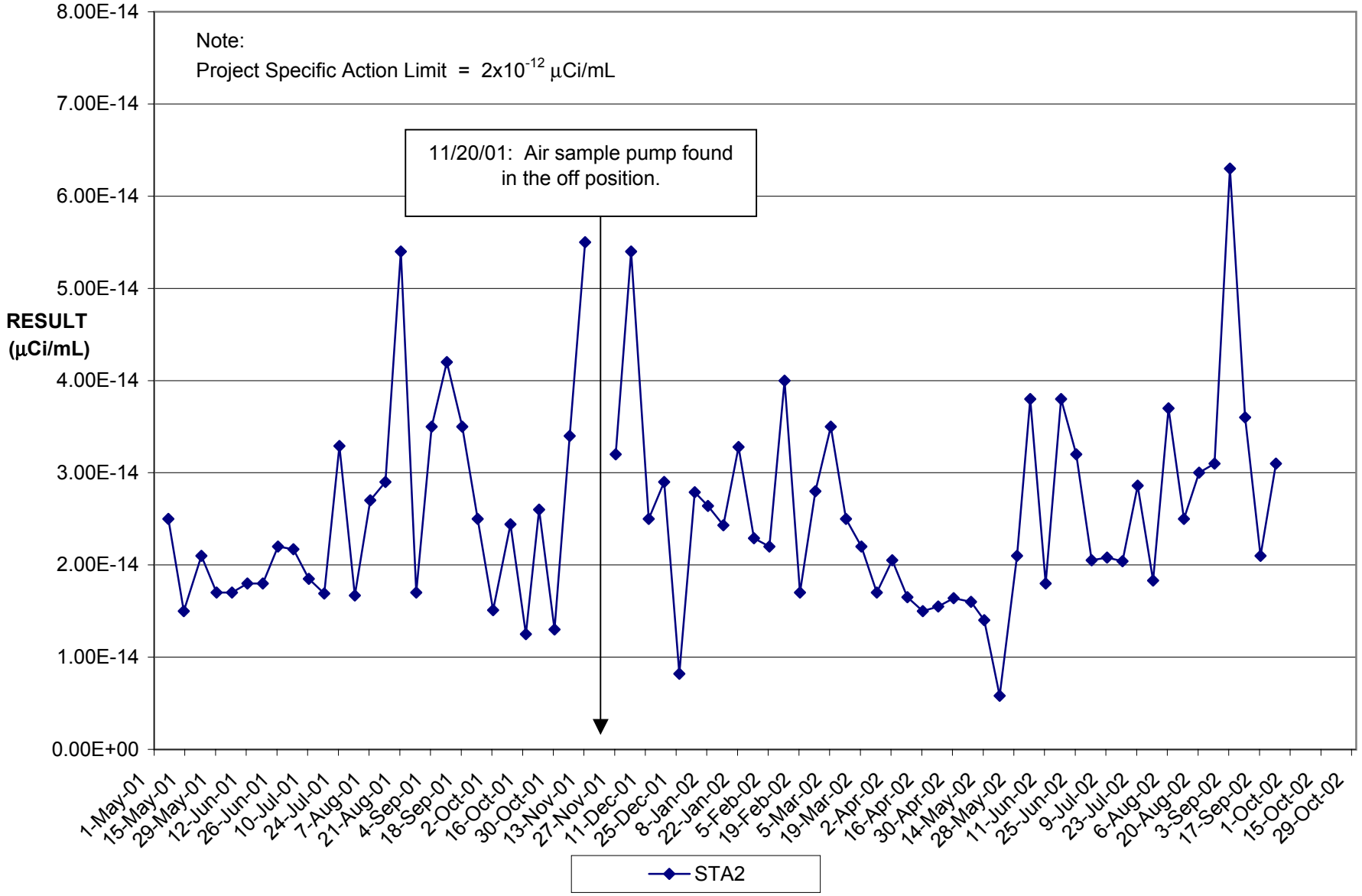


Figure 10
PBRF AIR RESULTS:
STA3 GROSS BETA

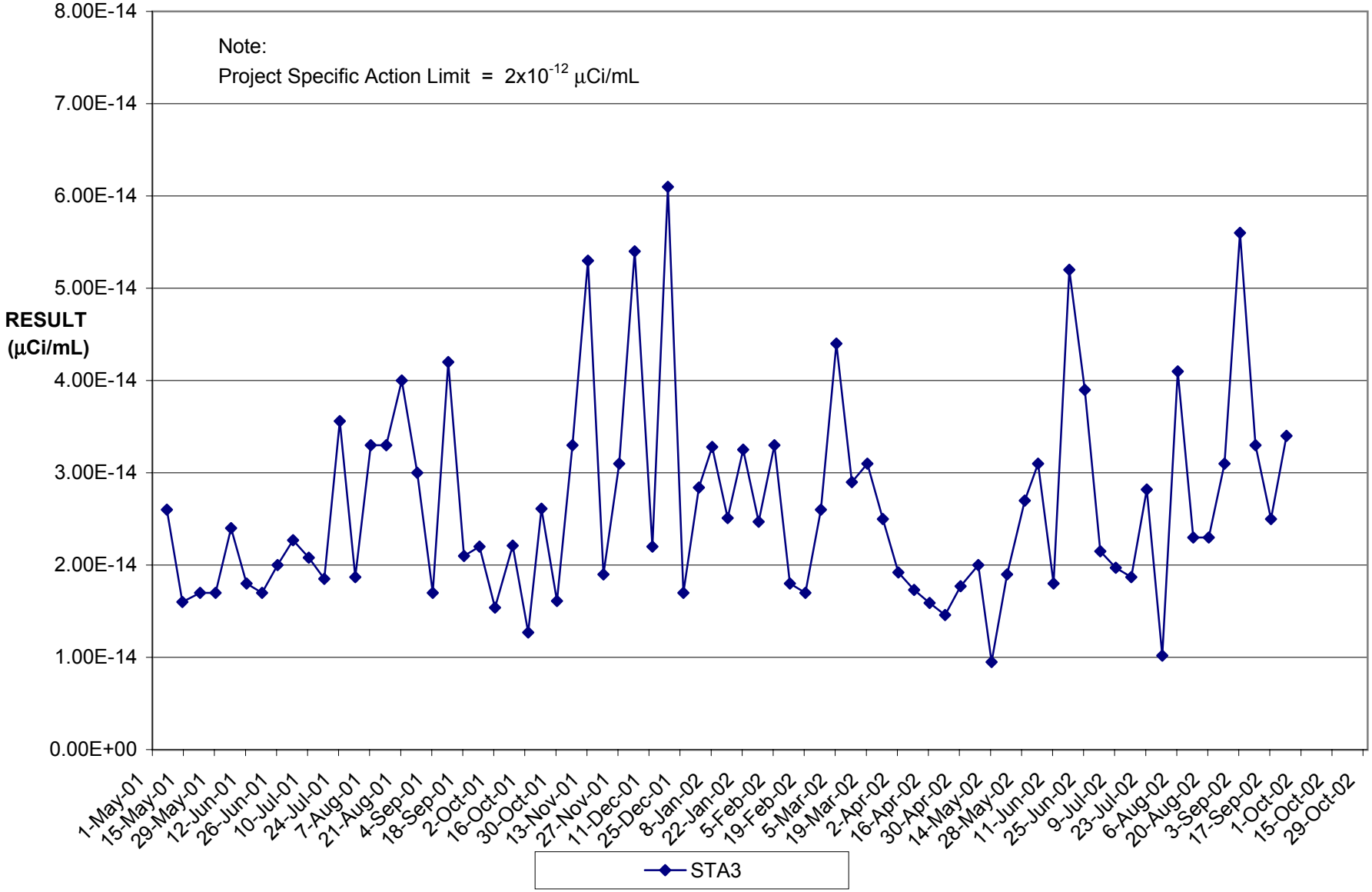


Figure 11
PBRF AIR RESULTS:
STA4 GROSS BETA

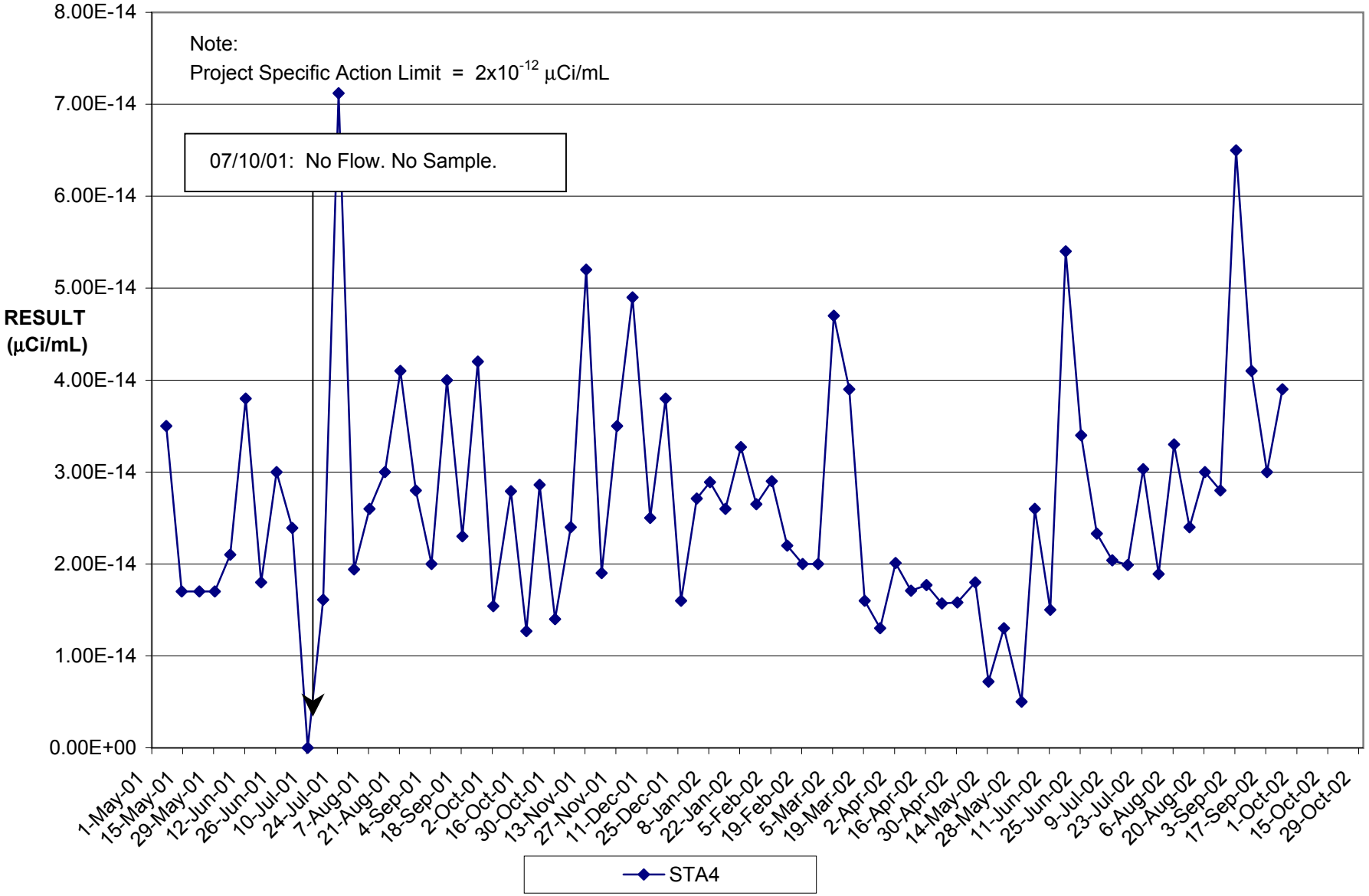


Figure 12
PBRF AIR RESULTS:
STA5 GROSS BETA

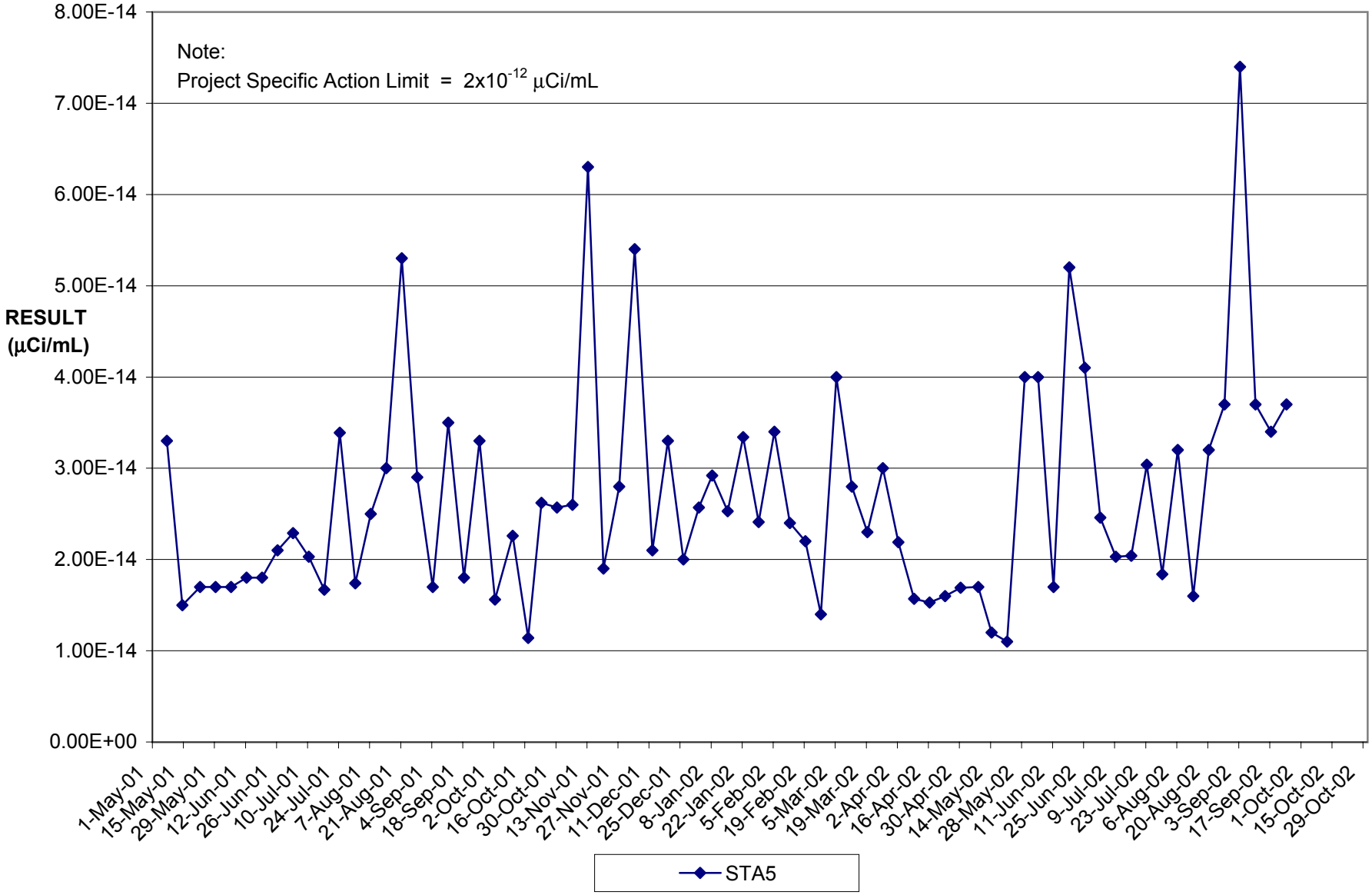


Figure 13
PBRF AIR RESULTS:
STA6 GROSS BETA

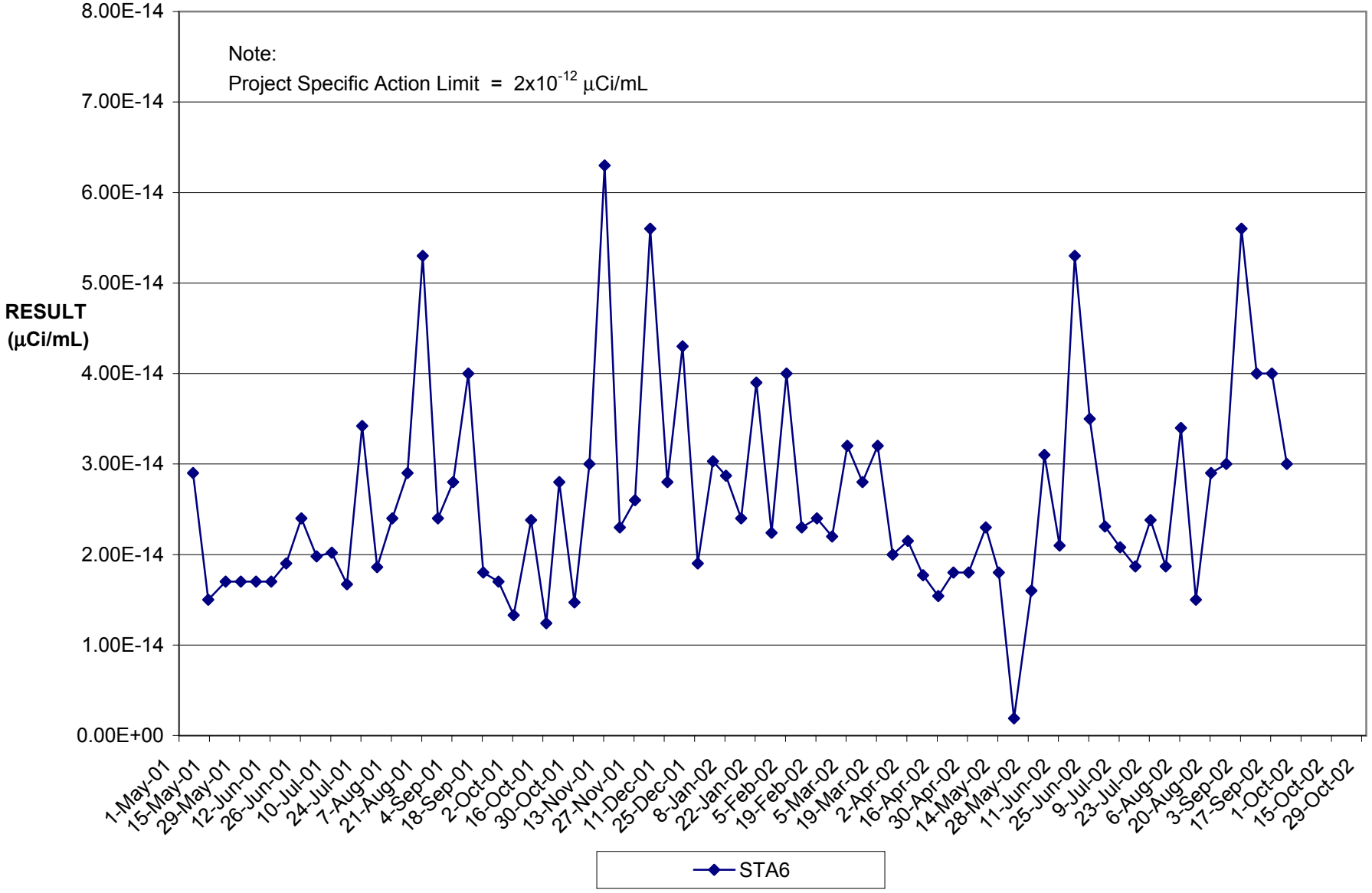


Figure 14
PBRF AIR :
CUMULATIVE GROSS BETA

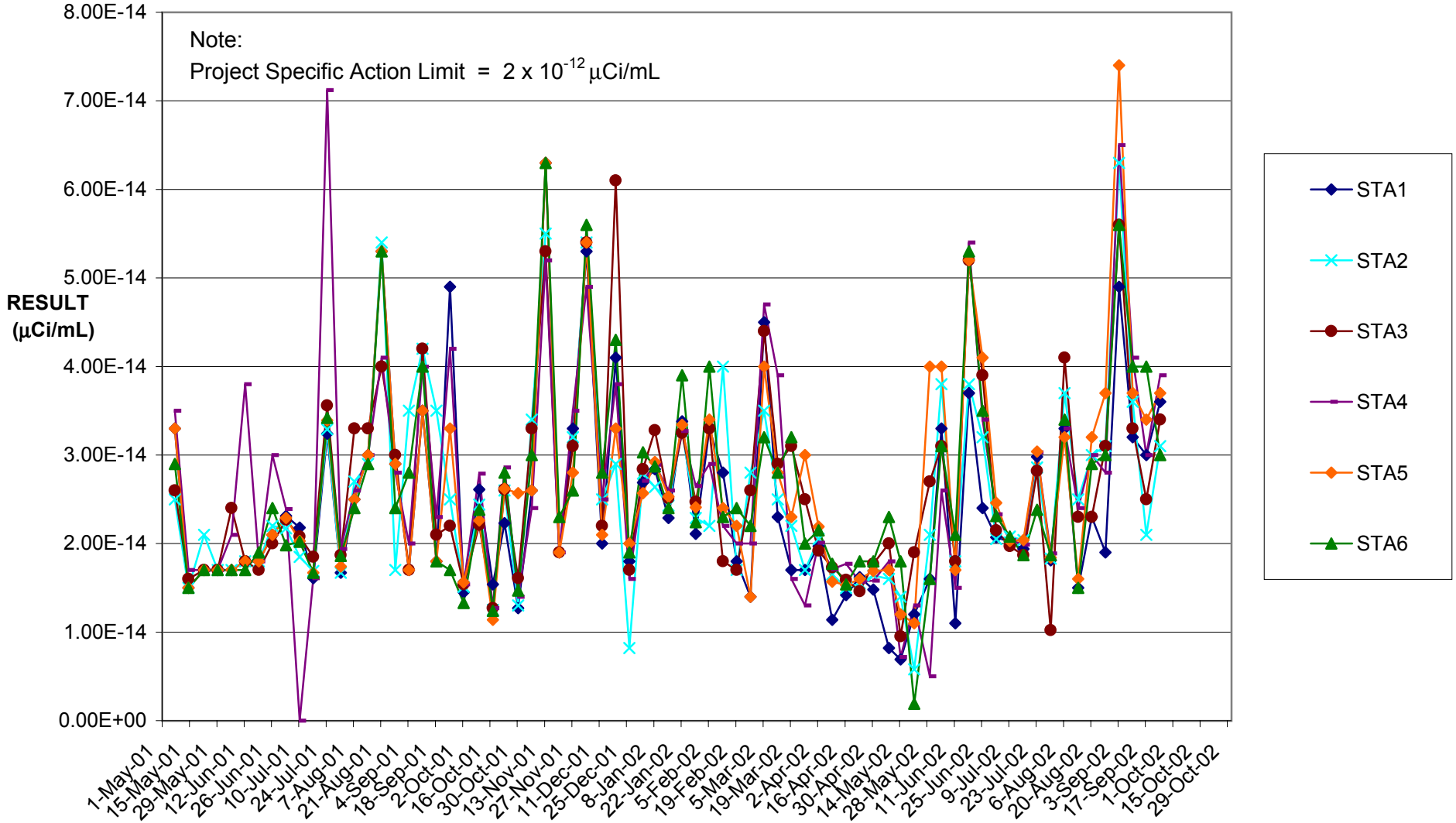


Table 1 FenceLine Air Filter Metal Results
Monthly Composite - May 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/MAY01	North FenceLine	1.7	0.5 U	0.5 U	2.0	6.7	7.8	0.040 U	4.7
PBRF/STA2/MAY01	South FenceLine	1.2	0.5 U	0.5 U	3.0	3.7	6.7	0.040 U	3.7 B
PBRF/STA3/MAY01	East FenceLine	1.5	0.5 U	0.5 U	1.7	3.4	7.7	0.026 B	4.2
PBRF/STA4/MAY01	West FenceLine	1.3	0.5 U	0.5 U	1.6	3.1	7.2	0.025 B	4.0 B
PBRF/STA5/MAY01	SouthWest - Up Wind	1.9	0.5 U	0.4 B	2.4	6.4	12.0	0.038 B	5.5
PBRF/STA6/MAY01	NorthEast - Down Wind	1.9	0.5 U	0.3 B	2.4	5.7	10.4	0.032 B	4.7

Table 2 FenceLine Air Filter Metal Results
Monthly Composite - June 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/JUNE01	North FenceLine	2.1	0.5 U	0.3 B	2.4	5.1	11.0	0.035 B	3.8 B
PBRF/STA2/JUNE01	South FenceLine	1.7	0.5 U	0.5 U	3.7	5.5	9.7	0.032 B	4.5
PBRF/STA3/JUNE01	East FenceLine	1.8	0.5 U	0.5 U	2.0	4.3	10.4	0.032 B	3.3 B
PBRF/STA4/JUNE01	West FenceLine	1.7	0.5 U	0.5 U	1.9	4.6	10.0	0.034 B	3.4 B
PBRF/STA5/JUNE01	SouthWest - Up Wind	2.0	0.5 U	0.3 B	2.3	5.9	10.8	0.036 B	4.2
PBRF/STA6/JUNE01	NorthEast - Down Wind	1.8	0.5 U	0.5 U	2.3	4.6	10.4	0.035 B	3.4 B

Table 3 FenceLine Air Filter Metal Results
Monthly Composite - July 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/JUL01	North FenceLine	1.7	0.50 U	0.27 B	1.9	3.0	9.2	0.023 B	4.4
PBRF/STA2/JUL01	South FenceLine	1.8	0.50 U	0.50 U	1.8	3.0	9.1	0.028 B	3.5
PBRF/STA3/JUL01	East FenceLine	2.9	0.22 B	0.42 B	2.7	4.5	11.9	0.032 B	7.8
PBRF/STA4/JUL01	West FenceLine	1.6	0.23 B	0.29 B	1.9	2.5	9.0	0.031 B	4.7
PBRF/STA5/JUL01	SouthWest - Up Wind	2.3	0.04 B	0.32 B	2.2	4.4	11.9	0.034 B	5.0
PBRF/STA6/JUL01	NorthEast - Down Wind	2.2	0.50 U	0.34 B	2.7	4.9	13.2	0.036 B	5.2

Table 4 FenceLine Air Filter Metal Results
Monthly Composite - August 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/AUG01	North FenceLine	1.7	0.5 U	0.5 U	2.4	3.5	9.8	0.029 B	2.2 B
PBRF/STA2/AUG01	South FenceLine	1.6	0.5 U	0.5 U	2.8	3.9	9.4	0.029 B	2.9 B
PBRF/STA3/AUG01	East FenceLine	1.6	0.5 U	0.5 U	2.4	3.4	9.6	0.032 B	3.0 B
PBRF/STA4/AUG01	West FenceLine	1.7	0.5 U	0.5 U	2.3	3.5	9.5	0.035 B	2.8 B
PBRF/STA5/AUG01	SouthWest - Up Wind	1.9	0.1 B	0.4 B	2.6	4.0	10.1	0.035 B	2.9 B
PBRF/STA6/AUG01	NorthEast - Down Wind	1.8	0.5 U	0.3 B	3.0	3.9	10.7	0.035 B	3.3 B

Table 5 FenceLine Air Filter Metal Results
Monthly Composite - September 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/SEPT01	North FenceLine	2.0	0.5 U	0.5 U	2.1	4.5	10.0	0.029 B	2.6 B
PBRF/STA2/SEPT01	South FenceLine	1.7	0.5 U	0.5 U	2.1	4.0	9.3	0.029 B	2.5 B
PBRF/STA3/SEPT01	East FenceLine	1.8	0.5 U	0.5 U	1.9	3.5	9.4	0.022 B	2.6 B
PBRF/STA4/SEPT01	West FenceLine	1.6	0.0 B	0.3 B	2.2	3.3	8.7	0.028 B	2.8 B
PBRF/STA5/SEPT01	SouthWest - Up Wind	1.8	0.5 U	0.5 U	2.1	3.7	9.7	0.028 B	3.0 B
PBRF/STA6/SEPT01	NorthEast - Down Wind	2.0	0.5 U	0.5 U	2.4	4.2	10.6	0.034 B	2.8 B

Table 6 FenceLine Air Filter Metal Results
Monthly Composite - October 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/OCT01	North FenceLine	2.1	0.2 B	0.29 B	1.4	3.6	6.1	0.036 B	2.0
PBRF/STA2/OCT01	South FenceLine	1.6	0.1 B	0.50 U	1.5	3.3	6.2	0.028 B	1.9 B
PBRF/STA3/OCT01	East FenceLine	1.8	0.5 U	0.50 U	1.6	4.0	8.0		2.6
PBRF/STA4/OCT01	West FenceLine	1.6	0.5 U	0.30 B	1.6	3.6	7.4	0.031 B	3.0
PBRF/STA5/OCT01	SouthWest - Up Wind	1.7	0.1 B	0.36 B	1.7	3.5	7.3	0.032 B	2.6
PBRF/STA6/OCT01	NorthEast - Down Wind	2.1	0.2 B	0.50 U	1.6	3.5	6.2	0.029 B	2.5

Table 7 FenceLine Air Filter Metal Results
Monthly Composite - November 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/NOV01	North FenceLine	2.2	0.5 U	0.4 B	1.9	4.8	12.3	0.039 B	2.5 B
PBRF/STA2/NOV01	South FenceLine	1.7	0.5 U	0.5 U	1.6	9.0	8.7	0.030 B	1.9 B
PBRF/STA3/NOV01	East FenceLine	2.2	0.5 U	0.4 B	1.9	5.1	11.7	0.034 B	4.2
PBRF/STA4/NOV01	West FenceLine	2.3	0.5 U	0.4 B	1.8	4.8	12.2	0.041	2.8 B
PBRF/STA5/NOV01	SouthWest - Up Wind	2.0	0.5 U	0.3 B	1.7	4.3	10.7	0.031 B	2.2 B
PBRF/STA6/NOV01	NorthEast - Down Wind	2.3	0.5 U	0.4 B	2.0	5.3	12.6	0.039 B	3.3 B

Table 8 FenceLine Air Filter Metal Results
Monthly Composite - December 2001

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/DEC01	North FenceLine	1.8	0.5 U	0.3 B	1.8	3.9	10.6	0.035 B	2.0 B
PBRF/STA2/DEC01	South FenceLine	1.6	0.5 U	0.3 B	1.9	3.8	9.6	0.030 B	2.0 B
PBRF/STA3/DEC01	East FenceLine	1.9	0.5 U	0.3 B	2.0	4.6	10.6	0.034 B	4.4
PBRF/STA4/DEC01	West FenceLine	1.8	0.5 U	0.3 B	1.8	4.1	10.8	0.032 B	3.6 B
PBRF/STA5/DEC01	SouthWest - Up Wind	1.6	0.5 U	0.3 B	1.7	3.9	9.9	0.036 B	2.7 B
PBRF/STA6/DEC01	NorthEast - Down Wind	1.8	0.5 U	0.3 B	1.6	4.4	9.9	0.034 B	3.4 B

Table 9 FenceLine Air Filter Metal Results
Monthly Composite - January 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/JAN02	North FenceLine	10.7	0.22 B	0.39 B	1.4	3.1	7.4	0.036 B	1.6 B
PBRF/STA2/JAN02	South FenceLine	51.0	0.24 B	0.44 B	1.6	4.1	9.0	0.033 B	2.4
PBRF/STA3/JAN02	East FenceLine	28.2	0.5 U	0.44 B	1.6	4.6	9.3	0.037 B	4.2
PBRF/STA4/JAN02	West FenceLine	22.9	0.5 U	0.38 B	1.2	3.8	8.5	0.033 B	2.0 B
PBRF/STA5/JAN02	SouthWest - Up Wind	20.4	0.5 U	0.41 B	1.4	3.8	8.4	0.037 B	2.4
PBRF/STA6/JAN02	NorthEast - Down Wind	37.3	0.5 U	0.43 B	1.7	5.5	10.2	0.038 B	3.3

Table 10 FenceLine Air Filter Metal Results
Monthly Composite - February 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/FEB02	North FenceLine	56.7	0.5 U	0.5 U	1.2	4.0	8.5	0.040 U	2.3 B
PBRF/STA2/FEB02	South FenceLine	86.5	0.5 U	0.5 U	1.2	3.4	9.1	0.022 B	1.7 B
PBRF/STA3/FEB02	East FenceLine	87.1	0.5 U	0.5 U	1.3	3.8	9.8	0.040 U	2.9 B
PBRF/STA4/FEB02	West FenceLine	74.8	0.5 U	0.5 U	1.1	5.3	9.0	0.023 B	1.8 B
PBRF/STA5/FEB02	SouthWest - Up Wind	27.2	0.5 U	0.5 U	1.0 B	2.9	6.7	0.040 U	2.0 B
PBRF/STA6/FEB02	NorthEast - Down Wind	34.0	0.5 U	0.5 U	1.2	3.4	7.9	0.040 U	2.4 B

Table 11 FenceLine Air Filter Metal Results
Monthly Composite - March 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/MARCH0	North FenceLine	31.2	0.5 U	0.5 U	1.2	4.0	9.2	0.040 U	2.8 B
PBRF/STA2/MARCH0	South FenceLine	28.0	0.5 U	0.5 U	1.2	4.3	8.7	0.021 B	2.5 B
PBRF/STA3/MARCH0	East FenceLine	35.1	0.5 U	0.5 U	1.3	4.3	9.7	0.040 U	3.3 B
PBRF/STA4/MARCH0	West FenceLine	27.6	0.5 U	0.5 U	1.2	4.2	9.5	0.040 U	4.6
PBRF/STA5/MARCH0	SouthWest - Up Wind	33.4	0.0 B	0.3 B	1.2	3.8	9.3	0.040 U	2.5 B
PBRF/STA6/MARCH0	NorthEast - Down Wind	48.7	0.5 U	0.5 U	1.6	4.6	11.0	0.040 U	3.4 B

Table 12 FenceLine Air Filter Metal Results
Monthly Composite - April 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/APR02	North FenceLine	58.1	0.5 U	0.31 B	1.6	4.6	10.9	0.023 B	3.4
PBRF/STA2/APR02	South FenceLine	50.8	0.5 U	0.27 B	1.8	5.0	9.8	0.022 B	3.5
PBRF/STA3/APR02	East FenceLine	51.1	0.2 B	0.31 B	1.6	4.7	10.4	0.021 B	4.6
PBRF/STA4/APR02	West FenceLine	75.5	0.5 U	0.28 B	1.3	4.7	9.8	0.021 B	3.7
PBRF/STA5/APR02	SouthWest - Up Wind	63.4	0.1 B	0.27 B	1.4	4.5	9.5	0.022 B	3.4
PBRF/STA6/APR02	NorthEast - Down Wind	50.6	0.2 B	0.33 B	1.7	5.6	10.4	0.025 B	3.9

Table 13 FenceLine Air Filter Metal Results
Monthly Composite - May 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/MAY02	North FenceLine	52.7	0.5 U	0.5 U	1.3	4.0	11.7	0.028 B	3.1 B
PBRF/STA2/MAY02	South FenceLine	48.8	0.5 U	0.5 U	1.3	4.1	11.2	0.027 B	3.1 B
PBRF/STA3/MAY02	East FenceLine	34.8	0.5 U	0.5 U	1.2	4.2	11.4	0.023 B	3.2 B
PBRF/STA4/MAY02	West FenceLine	51.6	0.5 U	0.5 U	1.2	3.7	11.3	0.025 B	3.0 B
PBRF/STA5/MAY02	SouthWest - Up Wind	25.0	0.5 U	0.5 U	1.2	3.8	8.3	0.024 B	2.5 B
PBRF/STA6/MAY02	NorthEast - Down Wind	19.6	0.5 U	0.3 B	1.2	4.3	11.2	0.029 B	3.6 B

Table 14 FenceLine Air Filter Metal Results
Monthly Composite - June 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/JUNE02	North FenceLine	31.7	0.5 U	0.5 U	1.0	3.8	10.7	0.027 B	4.1
PBRF/STA2/JUNE02	South FenceLine	21.8	0.5 U	0.5 U	1.5	5.2	8.9	0.028 B	3.7 B
PBRF/STA3/JUNE02	East FenceLine	29.3	0.5 U	0.5 U	1.5	4.4	8.9	0.026 B	4.7
PBRF/STA4/JUNE02	West FenceLine	28.7	0.5 U	0.5 U	1.1	3.9	8.4	0.027 B	2.9 B
PBRF/STA5/JUNE02	SouthWest - Up Wind	33.5	0.5 U	0.5 U	1.3	4.4	9.8	0.030 B	4.6
PBRF/STA6/JUNE02	NorthEast - Down Wind	37.5	0.5 U	0.5 U	1.6	4.7	9.3	0.028 B	4.1

Table 15 FenceLine Air Filter Metal Results
Monthly Composite - July 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/JUL02	North FenceLine	37.3	0.5 U	0.5 U	1.3	4.8	9.9	0.040 U	2.4
PBRF/STA2/JUL02	South FenceLine	46.3	0.5 U	0.3 B	1.5	5.3	10.6		3.0
PBRF/STA3/JUL02	East FenceLine	16.5	0.1 B	0.5 U	1.3	4.1	8.0	0.040 U	2.8
PBRF/STA4/JUL02	West FenceLine	13.8	0.2 B	0.5 U	1.3	4.3	9.5	0.022 B	2.8
PBRF/STA5/JUL02	SouthWest - Up Wind	17.9	0.5 U	0.5 U	1.3	4.8	9.9	0.022 B	4.9
PBRF/STA6/JUL02	NorthEast - Down Wind	46.8	0.3 B	0.3 B	1.8	6.3	10.4	0.024 B	2.8

Table 16 FenceLine Air Filter Metal Results
Monthly Composite - August 2002

Composite Sample ID	Location	Arsenic (ug)	Beryllium (ug)	Cadmium (ug)	Chromium (ug)	Copper (ug)	Lead (ug)	Mercury (ug)	Nickel (ug)
PBRF/STA1/AUG02	North FenceLine	35.6	0.5 U	0.5 U	1.0	3.4	8.1	0.040 U	2.1 B
PBRF/STA2/AUG02	South FenceLine	36.9	0.5 U	0.5 U	1.0 B	3.8	8.5	0.029 B	2.5 B
PBRF/STA3/AUG02	East FenceLine	31.1	0.5 U	0.5 U	1.0 B	4.4	8.4	0.025 B	2.7 B
PBRF/STA4/AUG02	West FenceLine	42.7	0.5 U	0.5 U	1.0 B	3.9	8.9	0.029 B	4.3
PBRF/STA5/AUG02	SouthWest - Up Wind	37.8	0.5 U	0.5 U	0.9 B	3.9	8.8	0.028 B	2.8 B
PBRF/STA6/AUG02	NorthEast - Down Wind	50.0	0.5 U	0.5 U	1.1	4.4	8.9	0.028 B	2.9 B

Notes:
Metal results reports as total ug detected on the filters composited.

FenceLine Air Filters sampled for 1 week at 2cfm on 47mm glass fiber filters.
U = not detected at or above the laboratory reporting limit provided.
B = the compound was found in the sample, as well as the associated Laboratory QC blank.